Repair-Parts

ProMix® 2KS

312780F

EN

Plural Component Proportioner

Automatic systems for proportional mixing of plural component coatings, with Wall Mount Fluid Station or RoboMix Fluid Station. For professional use only.

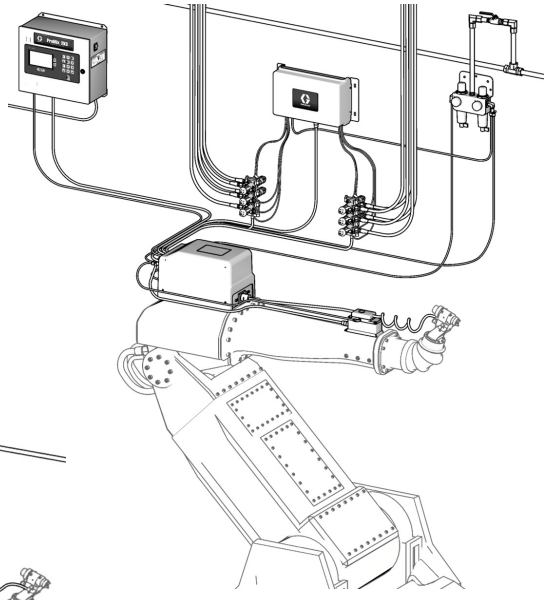
For use in explosive atmospheres (except the EasyKey).

Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions.

See pages 4-7 for model information, including maximum working pressure. Equipment approval labels are on page 3. Some components shown are not included with all systems.

Automatic System with RoboMix Fluid Station



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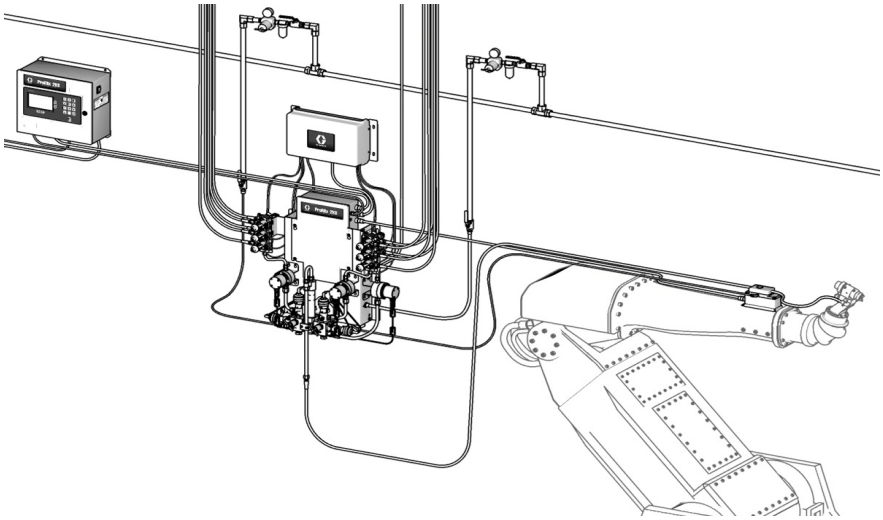
Automatic System with Wall Mount Fluid Station



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Related Manuals

Component Manuals in English

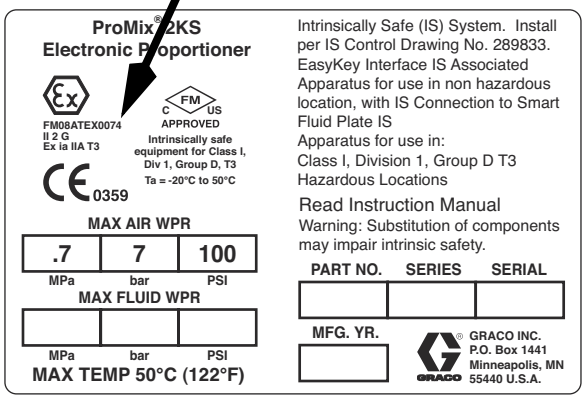
Manual	Description
312778	ProMix 2KS Automatic System Installation
312779	ProMix 2KS Automatic System Operation
312781	Fluid Mix Manifold
312782	Dispense Valve
312783	Color Change Valve Stacks
312787	Color Change Module Kit
312784	Gun Flush Box Kits
310745	Gun Air Shutoff Kit
312786	Dump Valve and Third Purge Valve Kits
312785	Network Communication Kits
308778	G3000/G3000HR/G250/G250HR Flow Meter
313599	Coriolis Flow Meter
313212	Gun Flush Box Integration Kit
313290	Floor Stand Kit
313542	Beacon Kit
313386	Basic Web Interface/Advanced Web Interface
406800	15V825 Discrete I/O Board Kit

Equipment Approvals

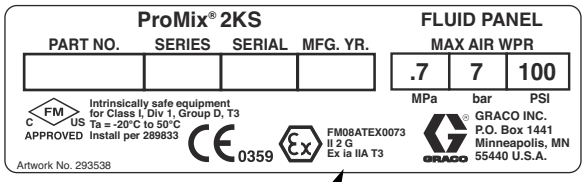
Equipment approvals appear on the following labels which are attached to the Fluid Station and EasyKey™. See FIG. 1 on page 4 and FIG. 2 on page 6 for label locations.

EasyKey and Fluid Station Label

ATEX Certificate is listed here



Fluid Station Label



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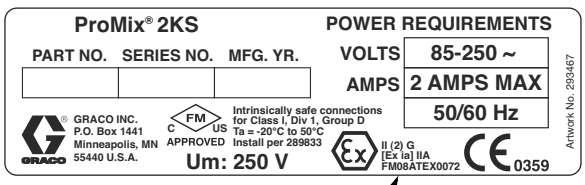
EasyKey Label



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System Configuration and Part Numbers

Wall Mount Fluid Station Configurator Key

The configured part number for your equipment is printed on the equipment identification labels. See FIG. 1 for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system.

Automatic System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Flow Control
A	D = EasyKey with LCD Display	0 = No Meters 1 = G3000 (A and B) 2 = G3000HR (A and B) 3 = 1/8 in. Coriolis (A) and G3000 (B) 4 = G3000 (A) and 1/8 in. Coriolis (B) 5 = 1/8 in. Coriolis (A) and G3000HR (B) 6 = G3000HR (A) and 1/8 in. Coriolis (B) 7 = 1/8 in. Coriolis (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure)	N = No Y = Yes

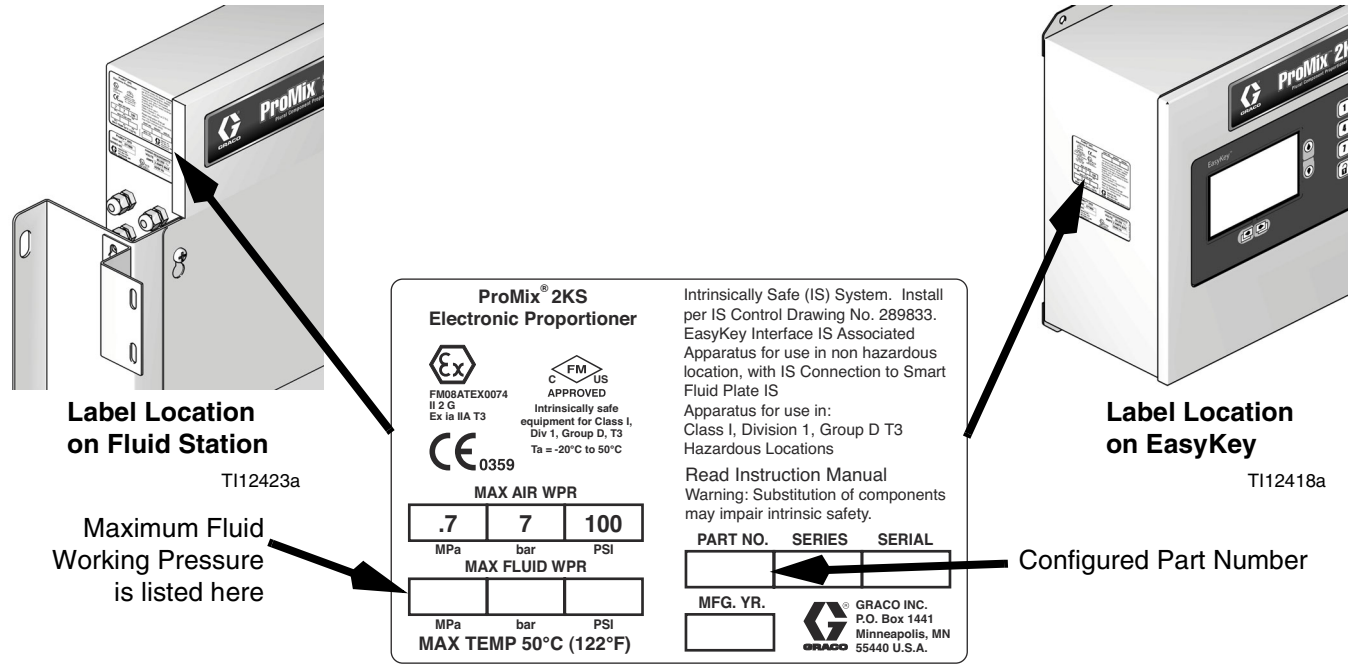


FIG. 1: Identification Label, Automatic Wall Fluid Station Systems

Hazardous Location Approval

Models using a G3000, G3000HR, or intrinsically safe Coriolis meter for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3 or Zone I Group IIA T3.

Maximum Working Pressure

Maximum working pressure rating is dependent on the fluid component options selected. ***The pressure rating is based on the rating of the lowest rated fluid component.*** Refer to the component pressure ratings below. *Example:* Model AD110Y has a maximum working pressure of 190 psi (1.31 MPa, 13.1 bar).

See the identification label on your EasyKey or fluid station for the system maximum working pressure. See FIG. 1.

ProMix Fluid Components Maximum Working Pressure

Base System (no meters [option 0], no color change [option 0], and no flow control [option N]) . . . . . 4000 psi (27.58 MPa, 275.8 bar)
Meter Option 1 and 2 (G3000 or G3000HR) . . . . . 4000 psi (27.58 MPa, 275.8 bar)
Meter Option 3, 4, 5, 6, and 7 (one or two Coriolis Meters) . . . . . 2300 psi (15.86 MPa, 158.6 bar)
Color Change Option 1, 2, 3 and 4 and Catalyst Change Option 1 and 2 (low pressure valves) . . . . . 300 psi (2.07 MPa, 20.6 bar)
Flow Control Option Y (Yes) . . . . . 190 psi (1.31 MPa, 13.1 bar)

Flow Meter Fluid Flow Rate Range

G3000 . . . . . 75-3800 cc/min. (0.02-1.0 gal./min.)
G3000HR . . . . . 38-1900 cc/min. (0.01-0.50 gal./min.)
Coriolis Meter . . . . . 20-3800 cc/min. (0.005-1.00 gal./min.)
S3000 Solvent Meter (accessory) . . . . . 38-1900 cc/min. (0.01-0.50 gal./min.)

Standard Features

Feature
EasyKey with LCD
Fiber Optic and Power Cables, 50 ft (15.25 m)
Wall Mount Fluid Station, 50 cc Integrator and Static Mixer
Discrete I/O Board
A Side Dump Valve, if color valve(s) selected
B Side Dump Valve, if catalyst valve(s) selected
Flow Control with 15 ft (4.57 m) Cable (if selected)
Basic Web Interface

RoboMix Fluid Station Configurator Key

The configured part number for your equipment is printed on the equipment identification labels. See FIG. 2 for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system.

RoboMix System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Flow Control
R	D = EasyKey with LCD Display	0 = No Meters 1 = G250 (A and B) 2 = G250HR (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure)	N = No Y = Yes

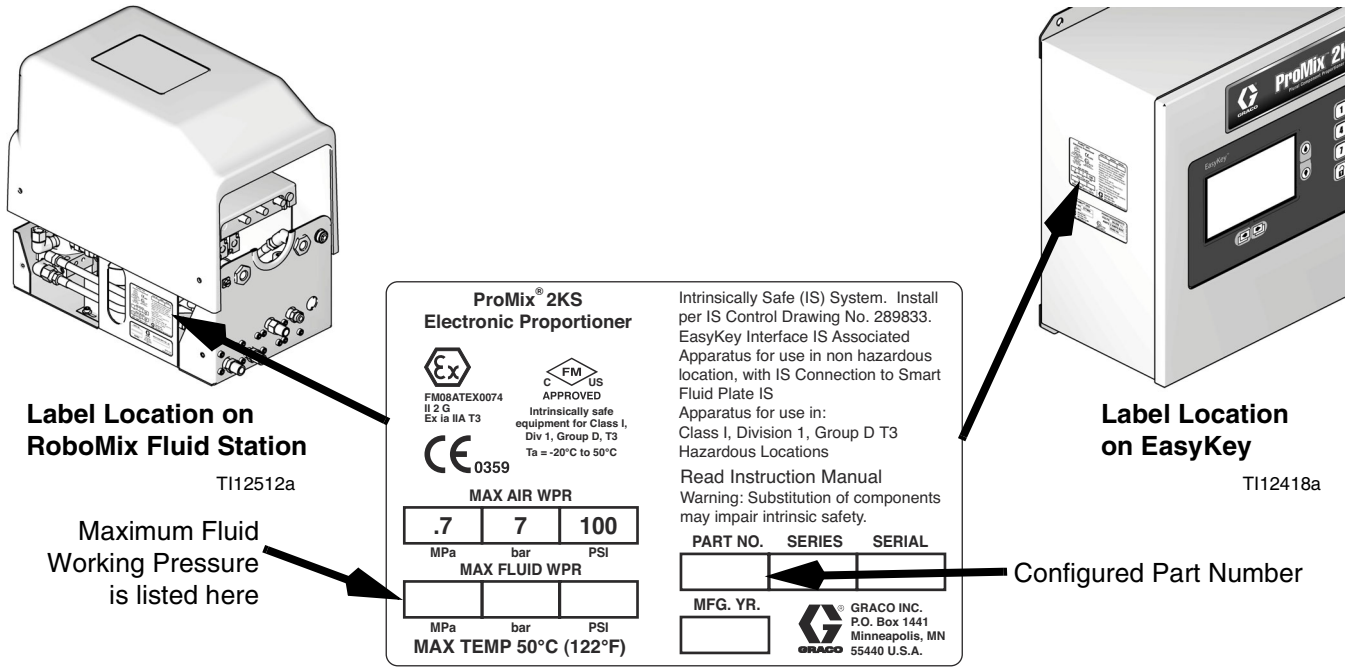


FIG. 2: Identification Label, Automatic RoboMix Fluid Station Systems

Hazardous Location Approval
Models using a G250 or G250HR for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3 or Zone I Group IIA T3.
Maximum Working Pressure
Maximum working pressure rating for RoboMix Fluid Station Systems is 190 psi (1.31 MPa, 13.1 bar). **See the identification label on your EasyKey or RoboMix fluid station for the maximum working pressure. See FIG. 2.**
ProMix RoboMix Systems Maximum Working Pressure
RoboMix Panel Options (all) . . . . . 190 psi (1.31 MPa, 13.1 bar)
Flow Meter Fluid Flow Rate Range
G250 Meter . . . . . 75-3800 cc/min. (0.02-1.0 gal./min.) G250HR Meter . . . . . 38-1900 cc/min. (0.01-0.50 gal./min.)

Standard Features

Feature
EasyKey with LCD
Fiber Optic and Power Cables, 50 ft (15.25 m)
Remote Fluid Station, 25 cc Integrator
Discrete I/O Board
A Side Dump Valve, if color valve(s) selected
B Side Dump Valve, if catalyst valve(s) selected
Flow Control with 15 ft (4.57 m) Cable (if selected)
Basic Web Interface

Accessories

Accessory
15V354 Third Purge Valve Kit
15V202 Third Purge Valve Kit
15V536 Solvent Flow Switch Kit
15V213 Power Cable, 100 ft (30.5 m)
15G710 Fiber Optic Cable, 100 ft (30.5 m)
15G614 Flow Control Extension Cable, 40 ft (12.2 m)
15U955 Injection Kit for Dynamic Dosing
15V034 10 cc Integrator Kit
15V033 25 cc Integrator Kit
15V021 50 cc Integrator Kit
24B618 100 cc Integrator Kit
15W034 Strobe Light Alarm Indicator Kit
15V331 Gateway Ethernet Communication Kit
15V963 Gateway DeviceNet Communication Kit
15V964 Gateway Profibus Communication Kit
15V337 Advanced Web Interface
280555 S3000 Solvent Flow Meter Kit

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions in your system installation manual.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

INTRINSIC SAFETY

Intrinsically safe equipment that is installed improperly or connected to non-intrinsically safe equipment will create a hazardous condition and can cause fire, explosion, or electric shock. Follow local regulations and the following safety requirements.

- Only models with a G3000, G250, G3000HR, G250HR, or intrinsically safe Coriolis meter are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3 or Zone I Group IIA T3.
- Do not install equipment approved only for a non-hazardous location in a hazardous area. See the ID label for the intrinsic safety rating of your model.
- Do not substitute or modify system components as this may impair intrinsic safety.

⚠ WARNING

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Tighten all fluid connections before operating the equipment.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
- Always wear chemically impermeable gloves when spraying or cleaning equipment.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

Important Two-Component Material Information

Isocyanate Conditions

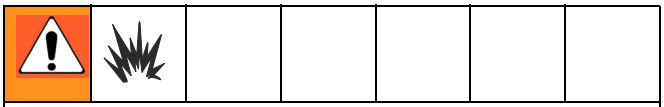
Spraying or dispensing materials containing isocyanates creates potentially harmful mists, vapors, and atomized particulates.

Read material manufacturer's warnings and material MSDS to know specific hazards and precautions related to isocyanates.

Prevent inhalation of isocyanate mists, vapors, and atomized particulates by providing sufficient ventilation in the work area. If sufficient ventilation is not available, a supplied-air respirator is required for everyone in the work area.

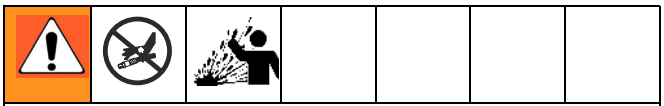
To prevent contact with isocyanates, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons, and goggles, is also required for everyone in the work area.

Material Self-ignition



Some materials may become self-igniting if applied too thickly. Read material manufacturer's warnings and material MSDS.

Keep Components A and B Separate



Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination of the equipment's wetted parts, **never** interchange component A (isocyanate) and component B (resin) parts.

Moisture Sensitivity of Isocyanates

Isocyanates (ISO) are catalysts used in two component coatings. ISO will react with moisture (such as humidity) to form small, hard, abrasive crystals, which become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity. If used, this partially cured ISO will reduce performance and the life of all wetted parts.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

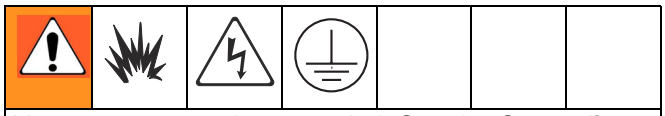
To prevent exposing ISO to moisture:

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Use moisture-proof hoses specifically designed for ISO, such as those supplied with your system.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Never use solvent on one side if it has been contaminated from the other side.
- Always lubricate threaded parts with ISO pump oil or grease when reassembling.

Changing Materials

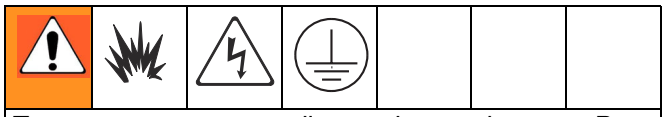
- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- Most materials use ISO on the A side, but some use ISO on the B side.

Grounding



Your system must be grounded. See the **Grounding** instructions in your ProMix 2KS Installation manual.

Check Resistance



To ensure proper grounding, resistance between ProMix components and true earth ground **must** be less than 1 ohm.

Have a qualified electrician check resistance between each ProMix component and true earth ground. If resistance is greater than 1 ohm, a different ground site may be required. Do not operate the system until the problem is corrected.

Pressure Relief Procedure

NOTE: The following procedures relieve all fluid and air pressure in the ProMix 2KS system. Use the procedure appropriate for your system configuration.

Relieve pressure when you stop spraying, before changing spray tips, and before cleaning, checking, or servicing equipment.

Single Color Systems

1. While in Mix mode (gun triggered), shut off the A and B fluid supply pumps/pressure pots. Close all fluid shutoff valves at the pump outlets.

2. With the gun triggered, push the manual override on the A and B dose valve solenoids to relieve pressure. See FIG. 5.

   NOTE: If a Dose Time alarm (E-7, E-8) occurs, clear the alarm.

3. Do a complete system purge, following the instructions under **Purging Using Recipe 0** in your system Operation manual.

4. Shut off the fluid supply to the solvent purge valve (SPV) and the air supply to the air purge valve (APV), FIG. 4.

5. With the gun triggered, push the manual override on the A and B purge valve solenoids to relieve air and solvent pressure. See FIG. 5. Verify that solvent pressure is reduced to 0.

   NOTE: If a Purge Volume alarm (E-11) occurs, clear the alarm.

Systems with Color Change and without Dump Valves

NOTE: This procedure relieves pressure through the sampling valve.

1. Complete all steps under **Single Color Systems**, page 12.
2. Close the A side shutoff valve (SVA), FIG. 4. Open the A side sampling valve (RVA).
3. Direct the A side sampling tube into a waste container.
4. See FIG. 3. Open the color change module. Using the solenoid identification labels as a guide, press and hold the override button on each color solenoid until flow from the sampling valve stops.
5. Press and hold the solvent solenoid override until clean solvent comes from the sampling valve, then release.
6. Shutoff the solvent supply to the color change stack solvent valve.
7. Press and hold the solvent solenoid override until solvent flow from the sampling valve stops.
8. Open the A side shutoff valve (SVA), FIG. 4. Close the A side sampling valve (RVA).

Systems with Color/Catalyst Change and Dump Valves

NOTE: This procedure relieves pressure through the dump valves.

1. Complete all steps under **Single Color Systems**, page 12.
2. Shut off all color and catalyst supplies to the valve stacks.
3. Press and hold the dump valve A solenoid override, FIG. 5.
4. See FIG. 3. Open the color change module. Using the solenoid identification labels as a guide, press and hold the override button on each color solenoid until flow from dump valve A stops.
5. Press and hold the dump valve B solenoid override, FIG. 5.
6. See FIG. 3. Using the solenoid identification labels as a guide, press and hold the override button on each catalyst solenoid until flow from dump valve B stops.
7. Press and hold the dump valve A solenoid override, FIG. 5.
8. Press and hold the A side (color) solvent solenoid override until clean solvent comes from the dump valve, then release.
9. Press and hold the dump valve B solenoid override, FIG. 5.
10. Press and hold the B side (catalyst) solvent solenoid override until clean solvent comes from the dump valve, then release.
11. Shutoff the solvent supply to the color/catalyst change stack solvent valves.
12. Press and hold the A and B solvent solenoid overrides and dump valve overrides until solvent flow from the dump valves stops.

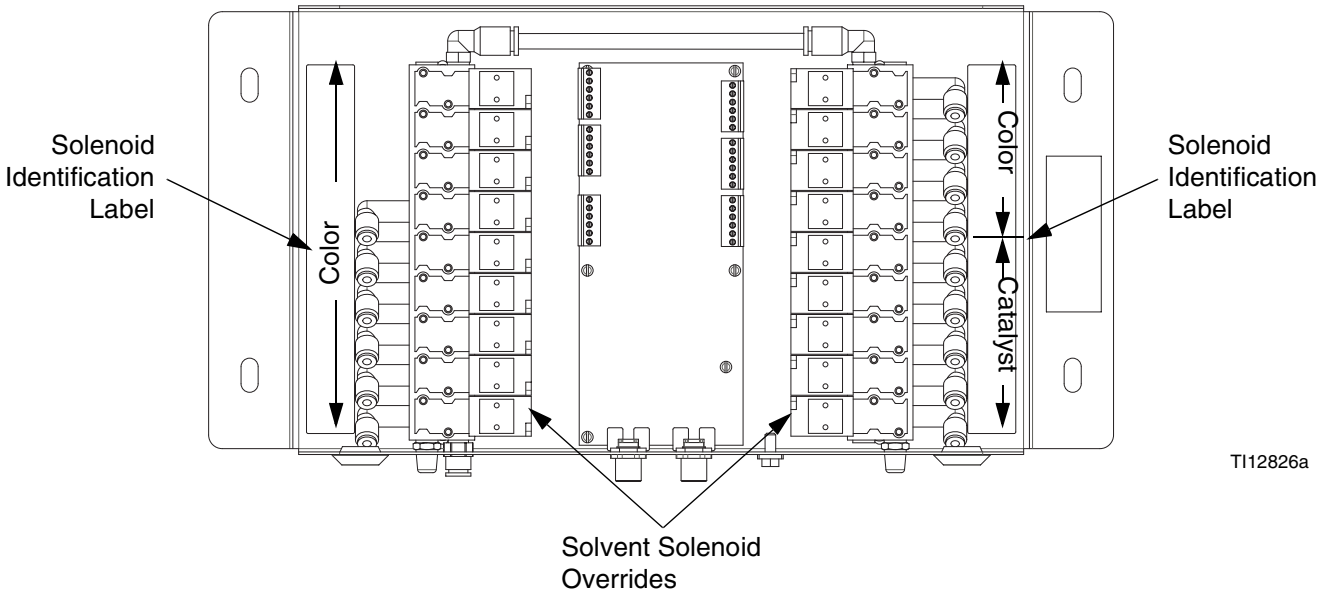
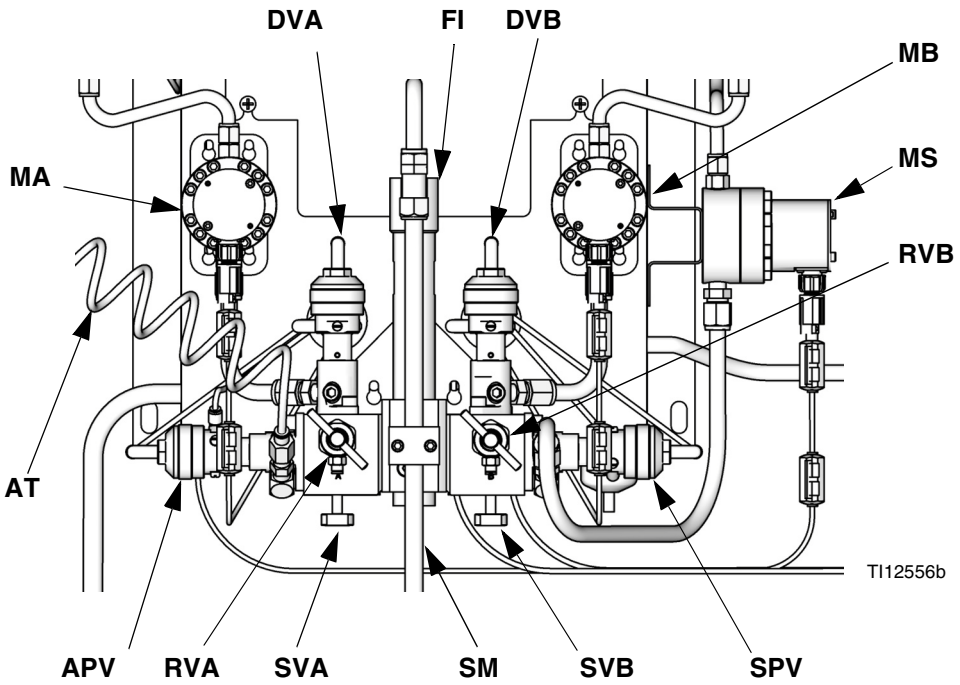


FIG. 3: Color Change Solenoids



Key:

MA	Component A Meter
DVA	Component A Dose Valve
RVA	Component A Sampling Valve
SVA	Component A Shutoff Valve
MB	Component B Meter
DVB	Component B Dose Valve
RVB	Component B Sampling Valve
SVB	Component B Shutoff Valve
MS	Solvent Meter (accessory)
SPV	Solvent Purge Valve
APV	Air Purge Valve
SM	Static Mixer
FI	Fluid Integrator
AT	Air Purge Valve Air Supply Tube

FIG. 4. Wall Mount Fluid Station

Troubleshooting

Follow **Pressure Relief Procedure**, page 12, before cleaning, checking, or servicing equipment.

NOTE: Do not use the fluid in the line that was dispensed off ratio as it may not cure properly.

Alarm Codes

Table 1 lists the system alarm codes. See the system operation manual for complete information on alarm troubleshooting.

Table 1: System Alarm Codes

Code	Description
E-1	Communication Error Alarm
E-2	Potlife Alarm
E-3	Ratio High Alarm
E-4	Ratio Low Alarm
E-5	Overdose A/B Dose Too Short Alarm
E-6	Overdose B/A Dose Too Short Alarm
E-7	Dose Time A Alarm
E-8	Dose Time B Alarm
E-9	Mix in Setup Alarm
E-10	Remote Stop Alarm
E-11	Purge Volume Alarm
E-12	CAN Network Communication Error Alarm
E-13	High Flow Alarm
E-14	Low Flow Alarm
E-15	System Idle Warning
E-16	Setup Change Warning
E-17	Power On Warning
E-18	Defaults Loaded Warning
E-19	I/O Alarm (see Operation Manual for details)
E-20	Purge Initiate Alarm
E-21	Material Fill Alarm
E-22	Tank A Low Alarm
E-23	Tank B Low Alarm
E-24	Tank S Low Alarm
E-25	Auto Dump Complete Alarm
E-26	Color/Catalyst Purge Alarm
E-27	Color/Catalyst Fill Alarm

Solenoid Troubleshooting

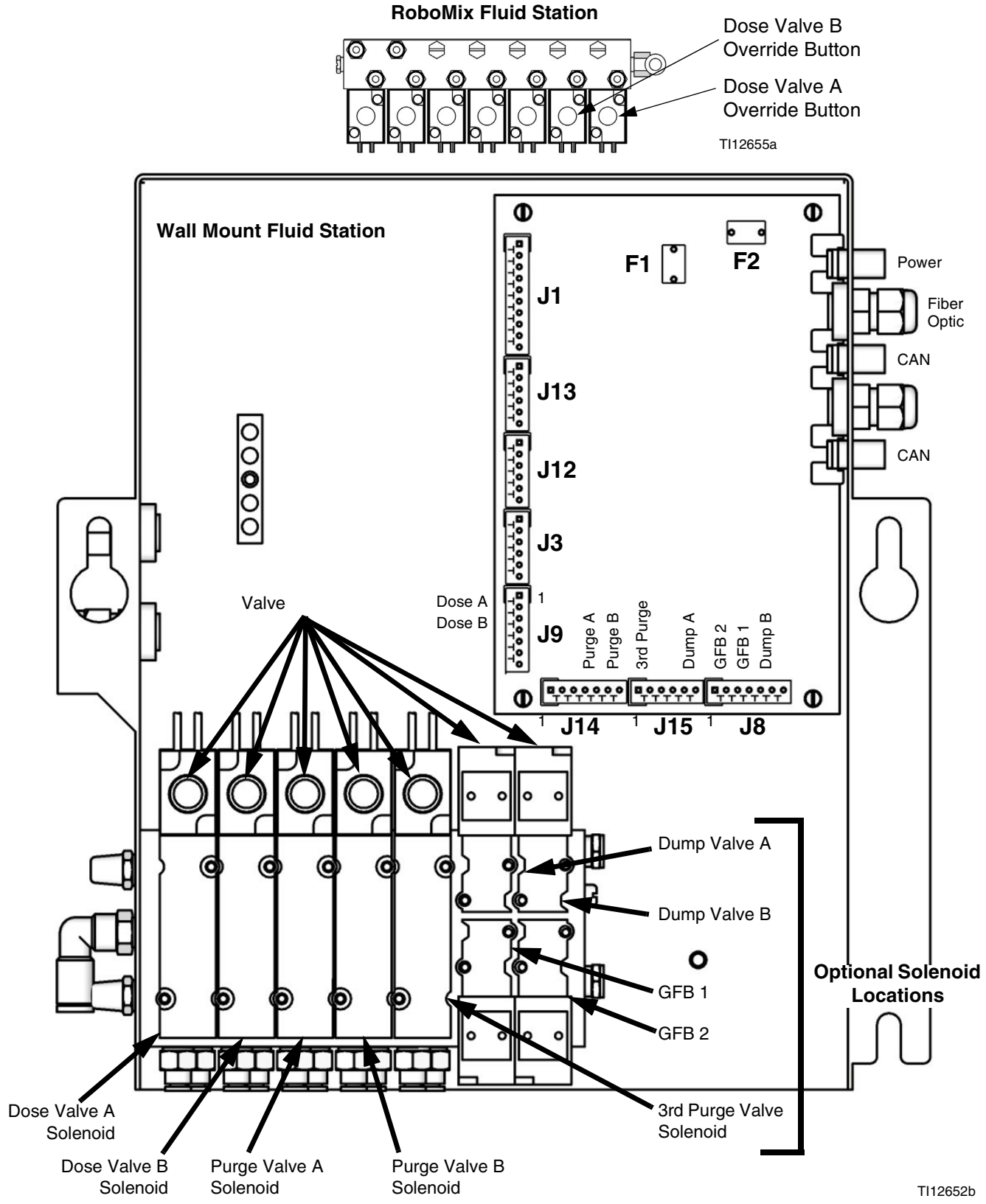


FIG. 5: Fluid Station Board and Solenoids

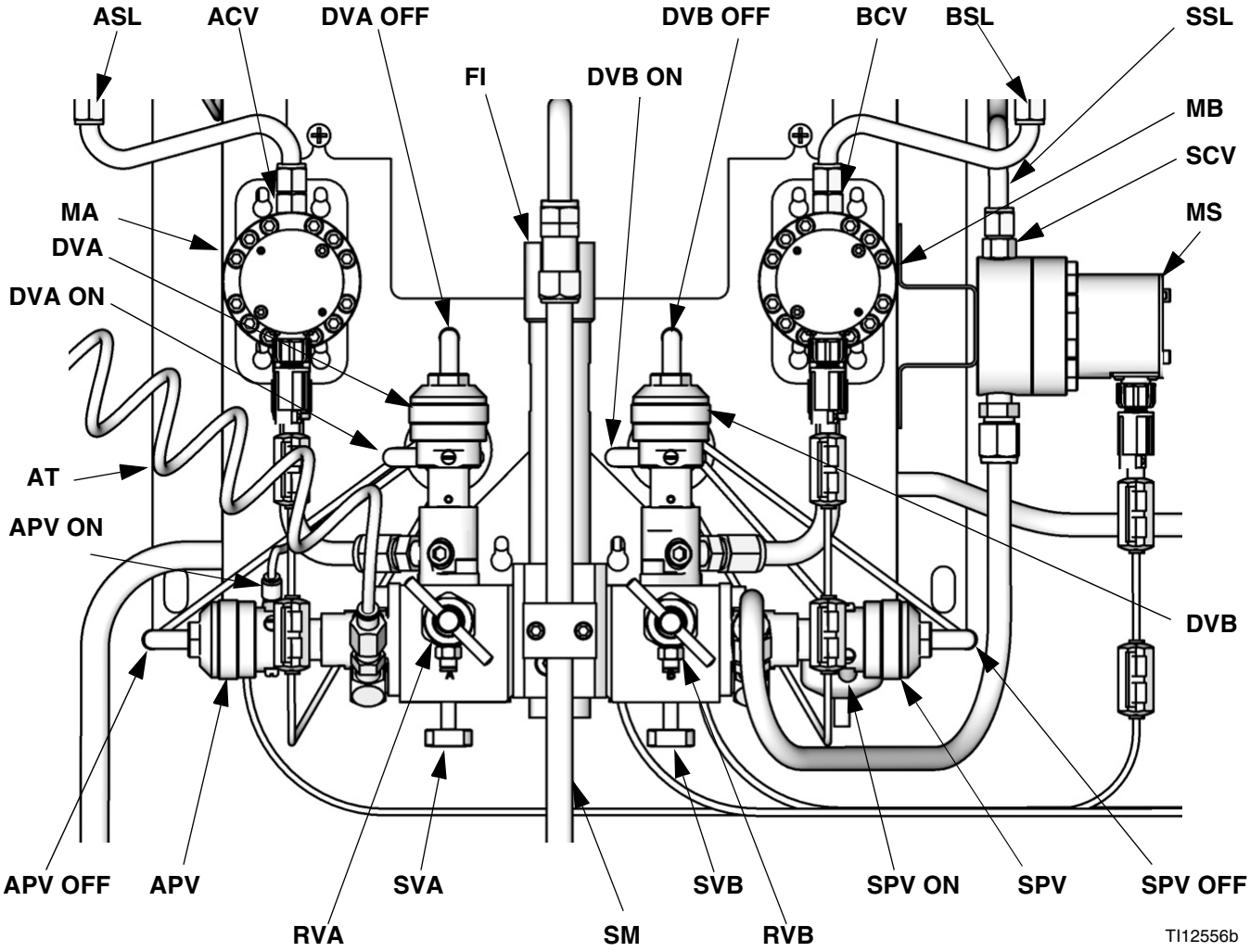
NOTE: Refer to the **Schematic Diagrams**, page 30.

If the dispense or purge valves are not turning on or off correctly, it could be caused by one of the following.

Cause	Solution
1. Air regulator pressure set too high or too low.	Check air pressure. 80-90 psi (550-630 kPa, 5.5-6.3 bar) is commonly used. Do not go below 70 psi (490 kPa, 4.9 bar) or above 120 psi (0.8 MPa, 8 bar).
2. Air or electrical lines damaged or connections loose.	Visually inspect air and electrical lines for kinks, damage, or loose connections. Service or replace as needed.
3. Solenoid failure	Manually operate the valves by removing the Fluid Station cover and pressing and releasing solenoid valve override buttons. FIG. 5. Use the control board diagnostics to check the signals. If signals do not occur correctly, go to Cause 4. Valves should snap open and shut quickly. If the valves actuate slowly, it could be caused by: • Air pressure to the valve actuators is too low. See Cause 1. • Solenoid is clogged. Make sure air supply has 5 micron filter installed. • Something is restricting the solenoid or tubing. Check for air output from air line for corresponding solenoid when valve is actuated. Clear restriction. • A dose valve is turned in too far. See ProMix 2KS Operation manual for settings. • Fluid pressure is high and air pressure is low. • Fluid seal in valve has failed. See corresponding valve manual for repair information.
4. Solenoid, cable, or fluid station control board failure.	Check voltage level to solenoid by pulling solenoid connector and checking voltage between pins. If voltage is 9-15 VDC, the solenoid is damaged. Replace solenoid or correct electrical line problem. If there is no voltage, replace the board.
5. Blown fuse.	Check condition of fuses F1 and F2. F1 powers J9 and J14 (Dose Valve A and B and Purge Valve A and B solenoids). F2 powers J8 and J15 (3rd Purge Valve, Dump Valve A and B, and GFB 1 and 2 solenoids).

Wall Mount Fluid Manifold Troubleshooting

See FIG. 6. To remove the fluid manifold, see page 49.
See manual 312781 for complete information on the fluid manifold.



Key:

Component A Side

MA	Component A Meter
DVA	Component A Dose Valve
RVA	Component A Sampling Valve
SVA	Component A Shutoff Valve
APV	Air Purge Valve
AT	Air Purge Valve Air Supply Tube
ASL	Component A Supply Line
ACV	Meter A Check Valve

Component B Side

MB	Component B Meter
DVB	Component B Dose Valve
RVB	Component B Sampling Valve
SVB	Component B Shutoff Valve
BSL	Component B Supply Line
BCV	Meter B Check Valve
SPV	Solvent Purge Valve
SSL	Solvent Supply Line
MS	Solvent Meter (accessory)
SCV	Solvent Meter Check Valve

Mixed Material

SM	Static Mixer
FI	Fluid Integrator

FIG. 6. Wall Mount Fluid Manifold

EasyKey Barrier Board Diagnostics

See FIG. 7 and Table 2 to troubleshoot the EasyKey barrier board. Also see the **EasyKey Electrical Schematic** on page 31 and the **System Electrical Schematic** on pages 32 and 33.

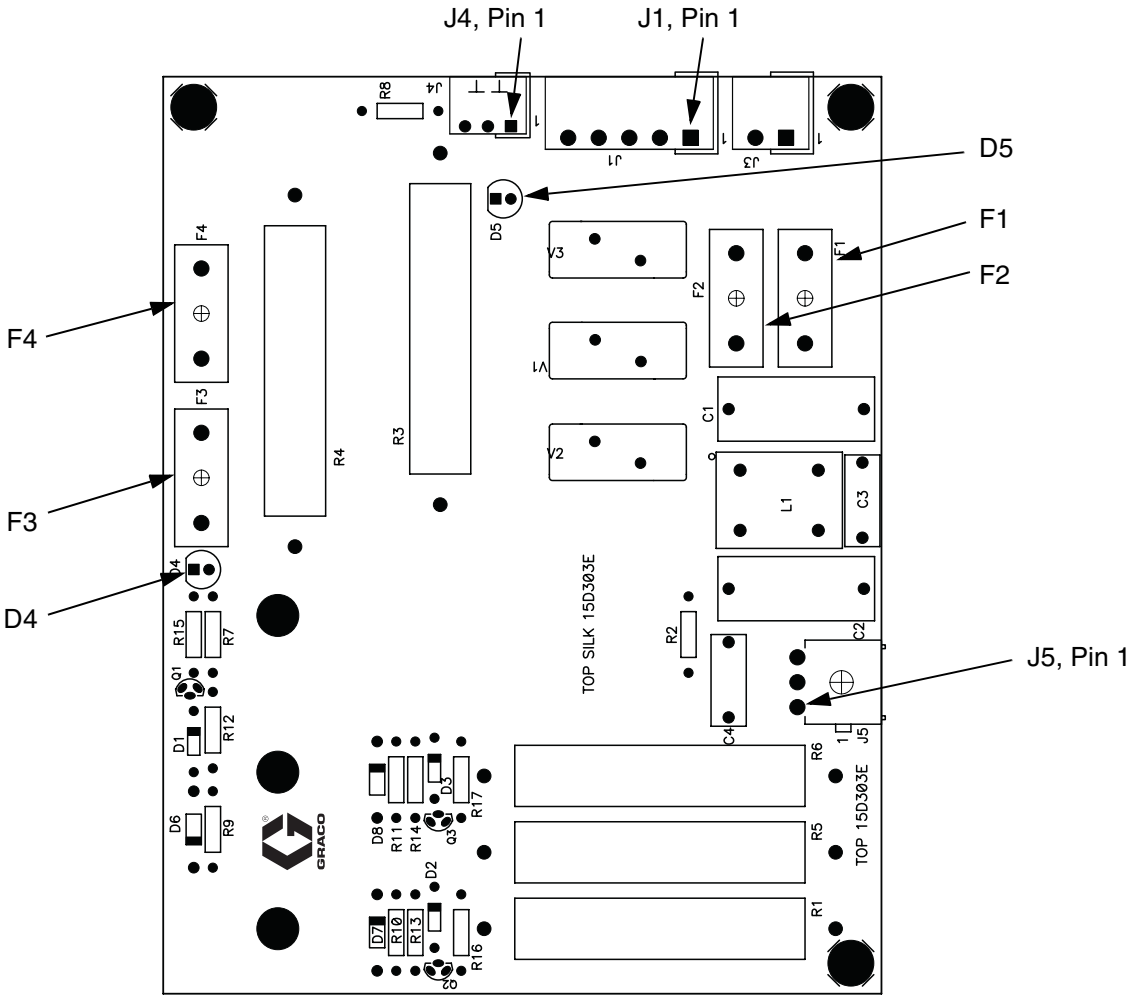


FIG. 7: 255786 EasyKey Barrier Board

Table 2: EasyKey Barrier Board Diagnostics

Connector	Description	Diagnosis
J1	AC Power Input	n/a
J4	24 Vdc Power Input to EasyKey Display Board	D5 turns on.
J5	12 Vdc Power Output to Fluid Station Board	D4 turns on if barrier board is functioning. If D4 does not turn on, fuses F3 or F4 (Graco Part No. 15D979) are blown or there is no input power at J4. If there is no input power (D5 does not light), fuses F1 and F2 (Graco Part No. 114788) may be blown.

EasyKey Display Board Diagnostics

See FIG. 8 and Table 3 to troubleshoot the EasyKey display board. Also see the **EasyKey Electrical Schematic** on page 31 and the **System Electrical Schematic** on pages 32 and 33.

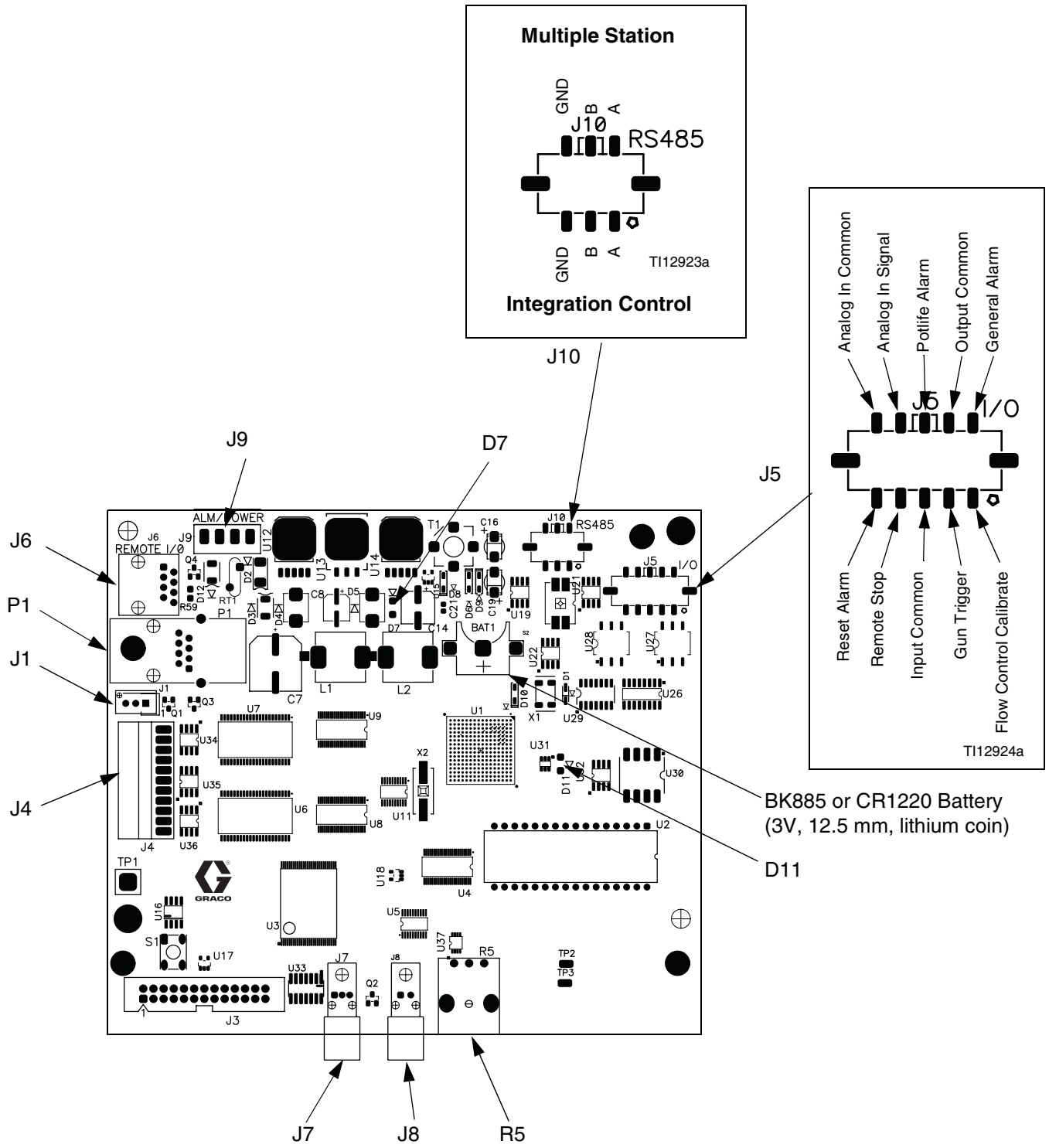


FIG. 8: 255767 EasyKey Display Board

Table 3: EasyKey Display Board Diagnostics

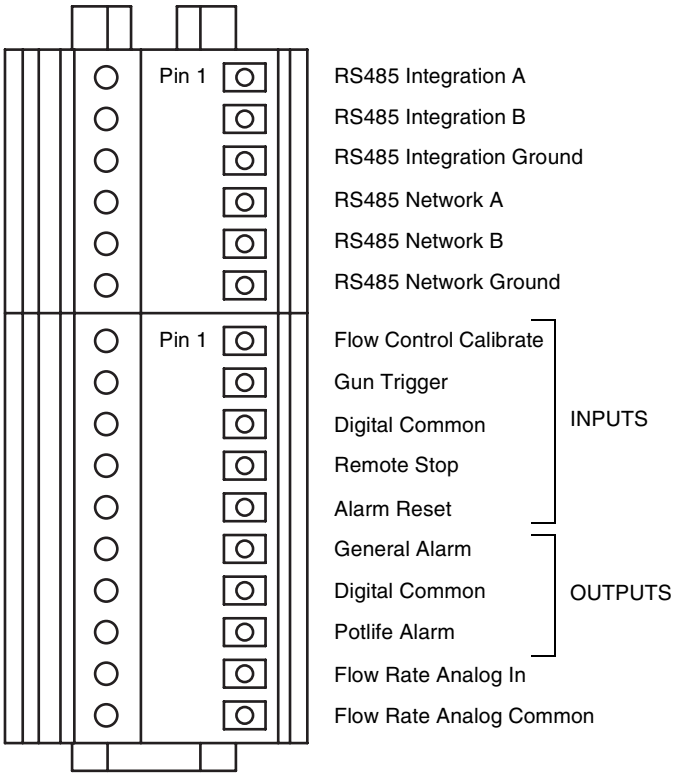
Connector/ Indicator	Description
J1	Graphic Display Backlight
J4	Ribbon Cable to Membrane
J5	Inputs and Outputs
J6	Remote I/O
J7	Fiber Optic Cable Input (black)
J8	Fiber Optic Cable Output (blue)

Connector/ Indicator	Description
J9	24 Vdc Power Input/Alarm Output
J10	RS485 Communication Terminals
D7 (green)	LED turns on when power is supplied to board
D11 (yellow)	LED blinks (heartbeat) when board is operating
P1	Ethernet Port
R5	Display Contrast/Dimmer Switch (turn by hand)

Discrete I/O Board Diagnostics

See FIG. 9 and FIG. 10 to troubleshoot the Discrete I/O board. Also see the **System Electrical Schematic** on pages 32 and 33.

I/O Terminal Strip Detail



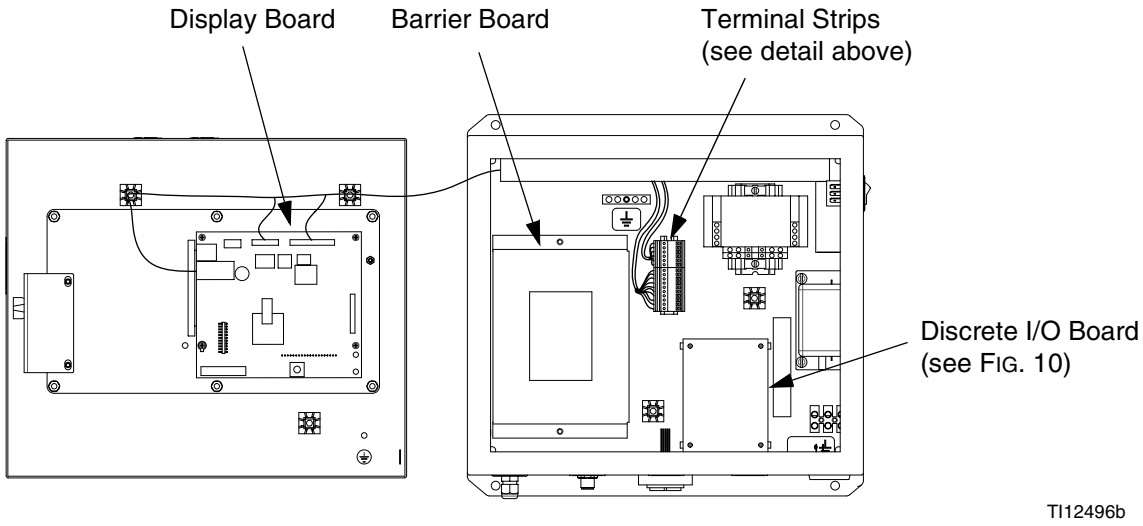


FIG. 9: EasyKey Control Boards and Terminal Strips

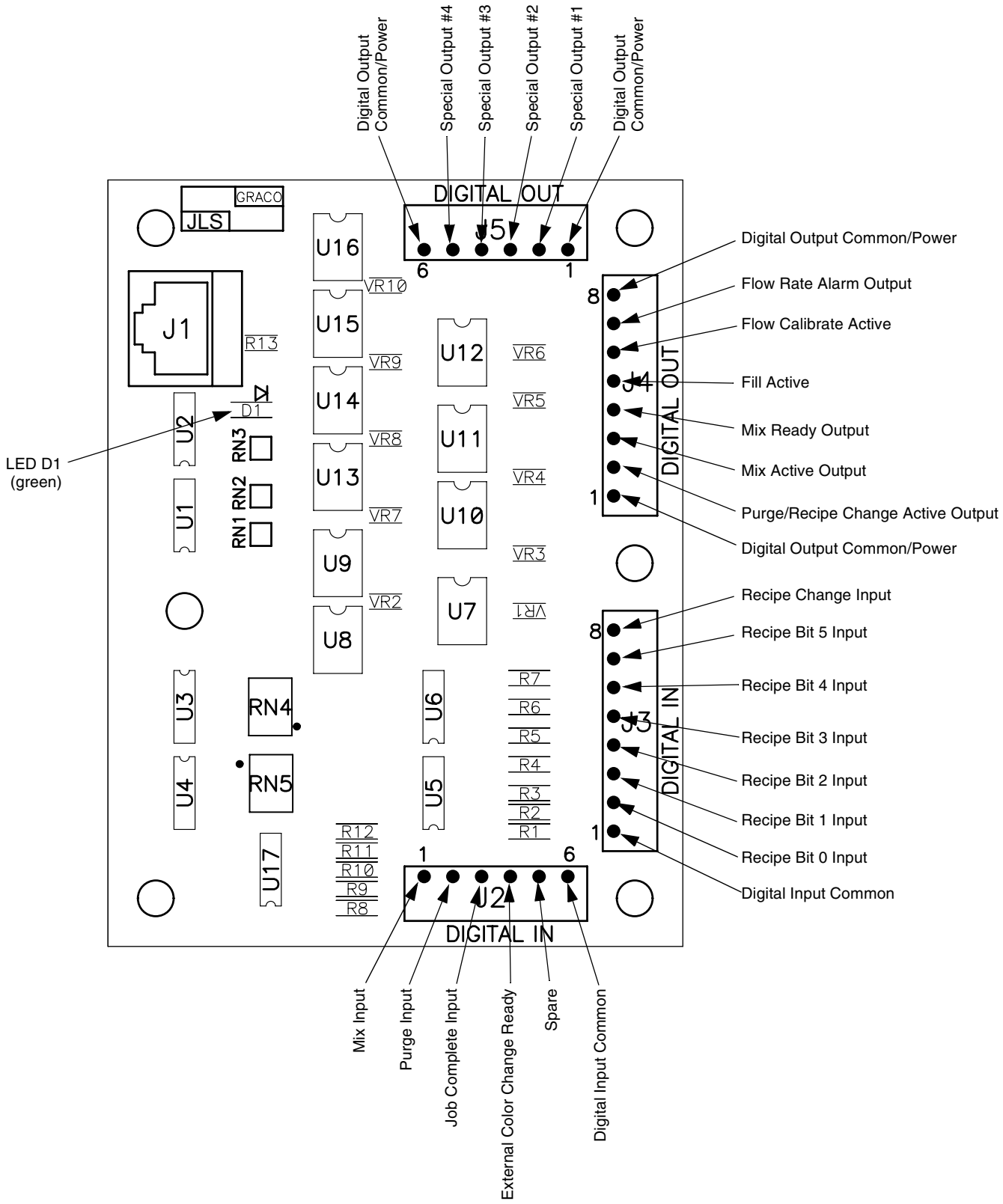


FIG. 10: 255766 Discrete I/O Board

Fluid Station Control Board Diagnostics

See FIG. 11 and Table 4 to troubleshoot the fluid station control board. Also see the **System Electrical Schematic** on pages 32 and 33.

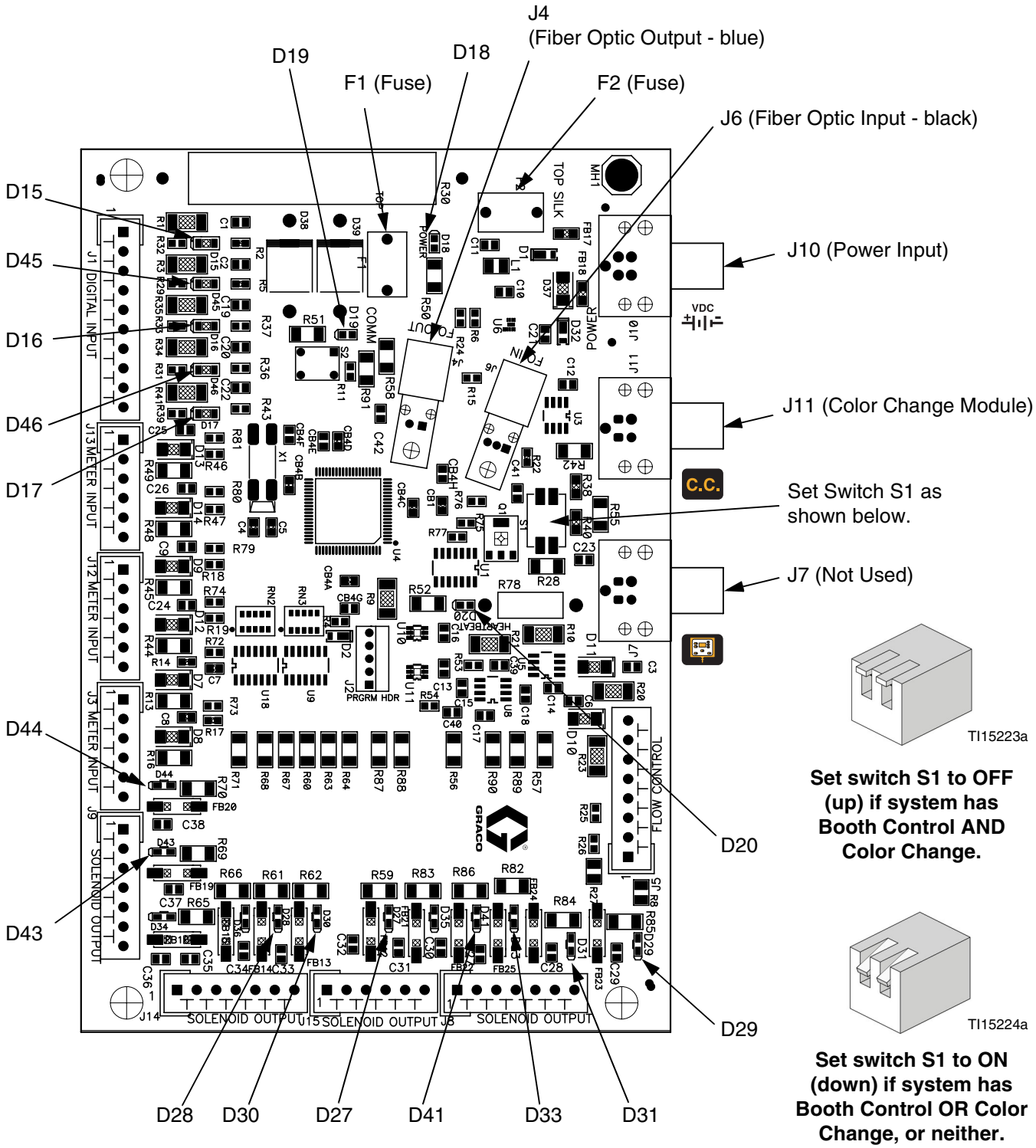


FIG. 11: 255765 Fluid Station Control Board Indicators

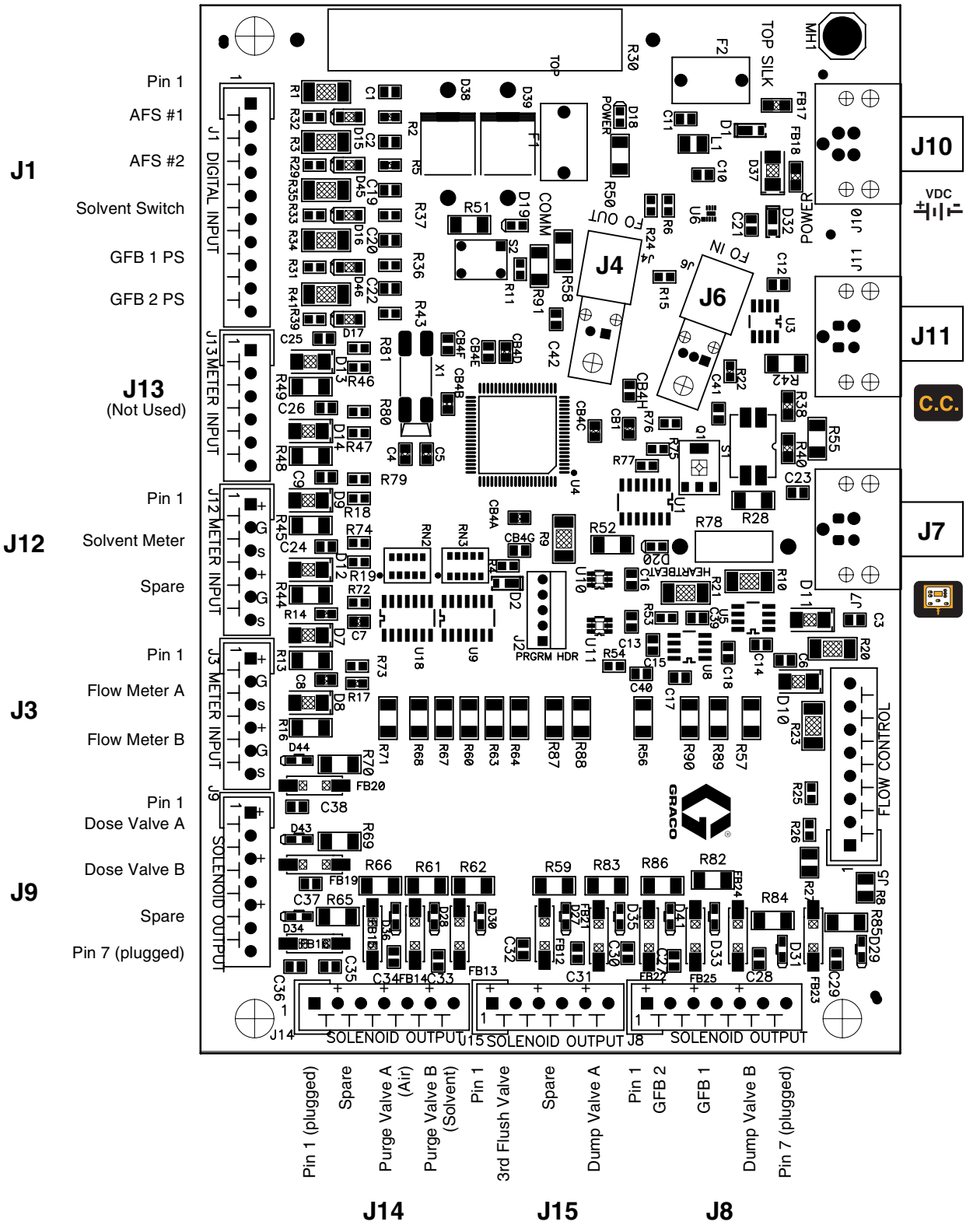


FIG. 12: 255765 Fluid Station Control Board Input/Output Connections

Table 4: Fluid Station Control Board Diagnostics

LED	Connector and Pin Nos.	Signal Description	Diagnosis
D15	J1, 1 & 2	Air Flow Switch 1	Turns on when gun 1 is triggered.
D16	J1, 5 & 6	Solvent Flow Switch	Turns on when solvent is flowing.
D17	J1, 9 & 10	Gun Flush Box 2 Pressure Switch	Turns on when a gun is in Gun Flush Box 2.
D18	J10	Power	Turns on when power is supplied to the board.
D19	n/a	Communication (yellow)	Turns on when board is communicating with EasyKey.
D20	n/a	Board OK	Blinks (heartbeat) during normal operation.
D27	J15, 1 & 2	Purge Valve C (Water Purge)	D27 through D44 turn on when ProMix sends a signal to actuate the related solenoid valve.
D28	J14, 3 & 4	Purge Valve A (Air Purge)	
D29	J8, 5 & 6	Dump Valve B	
D30	J14, 5 & 6	Purge Valve B (Solvent Purge)	
D31	J8, 3 & 4	Gun Flush Box 1 Trigger	
D33	J8, 1 & 2	Gun Flush Box 2 Trigger	
D41	J15, 5 & 6	Dump Valve A	
D43	J9, 3 & 4	Dose Valve B	
D44	J9, 1 & 2	Dose Valve A	
D45	J1, 3 & 4	Air Flow Switch 2	Turns on when gun 2 is triggered.
D46	J1, 7 & 8	Gun Flush Box 1 Pressure Switch	Turns on when a gun is in Gun Flush Box 1.
F1	n/a	Replaceable Fuse for Flow Meter A and B, Dose Valve A and B Solenoids, and Purge Valve A and B Solenoids	Check fuse condition if Flow Meters, Dose Valves, and Purge Valves are not working.
F2	n/a	Replaceable Fuse for Solvent Meter, Dump Valve A and B Solenoids, 3rd Purge Valve Solenoid, and Gun Flush Box 1 and 2 Solenoids	Check fuse condition if Solvent Meter, Dump Valves, 3rd Purge Valve, and Gun Flush Boxes are not working.

Color Change Board Diagnostics

See FIG. 13 and Table 5 to troubleshoot the color change board. Also see the **System Electrical Schematic** on pages 32 and 33. To replace the color change board, see manual 312787.

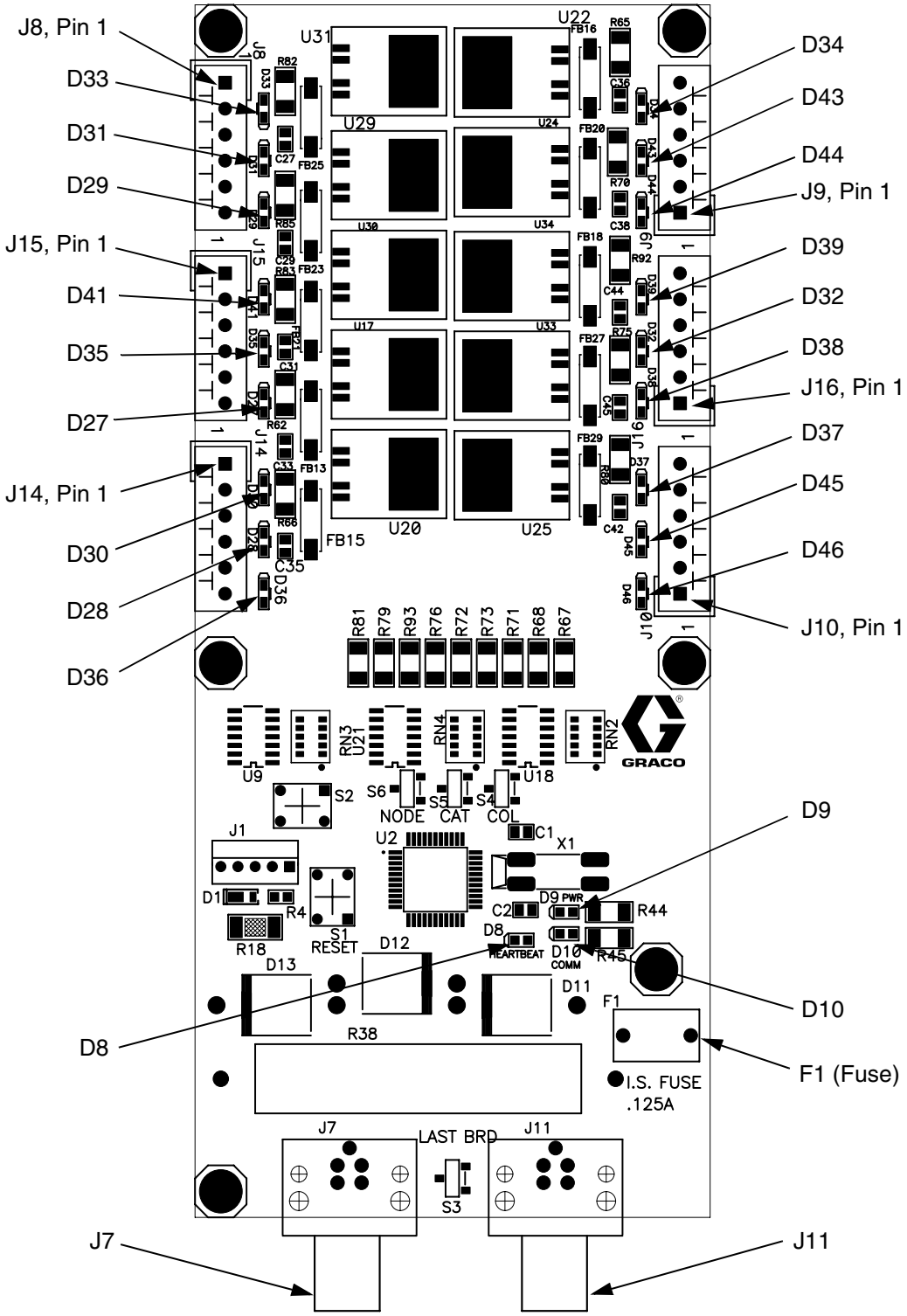


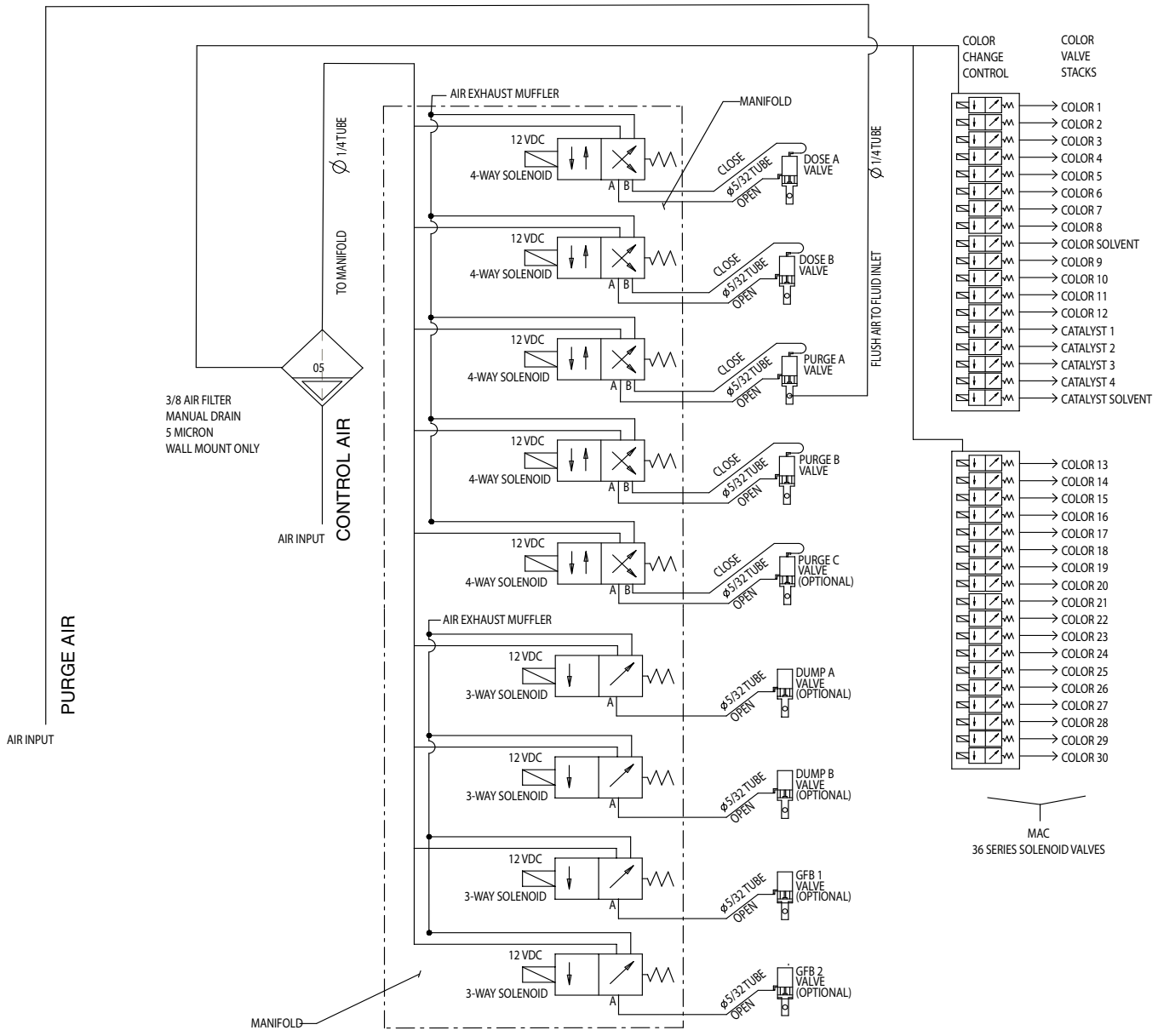
FIG. 13: 256172 Color Change Board

Table 5: Color Change Board Diagnostics

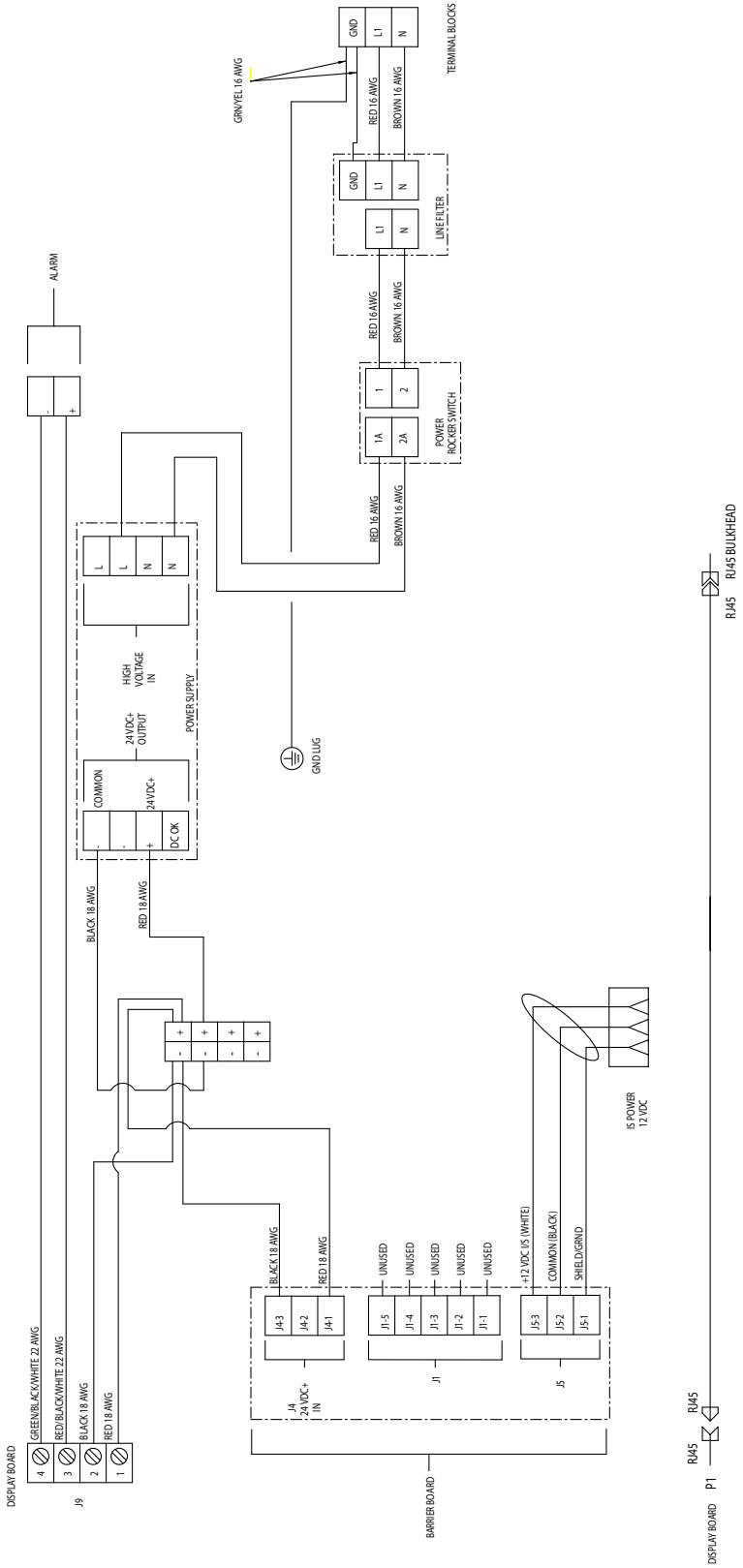
LED	Connector and Pin Nos.	Board 1 Signal Description	Board 2 Signal Description	Diagnosis
D8	n/a	Board OK	Board OK	Blinks (heartbeat) during normal operation.
D9	n/a	Communication (yellow)	Communication (yellow)	Turns on when board is communicating with Pro-Mix 2KS.
D10	J7	Power	Power	Turns on when power is supplied to the board.
D27	J15, 5 & 6	Color 3	Color 16	D27 through D46 turn on when ProMix 2KS sends a signal to actuate the related solenoid valve.
D28	J14, 3 & 4	Color 1	Color 14	
D29	J8, 5 & 6	Color 6	Color 19	
D30	J14, 1 & 2	Color 2	Color 15	
D31	J8, 3 & 4	Color 7	Color 20	
D32	J16, 3 & 4	Catalyst 4	Color 26	
D33	J8, 1 & 2	Color 8	Color 21	
D34	J9, 5 & 6	Color 9	Color 22	
D35	J15, 3 & 4	Color 4	Color 17	
D36	J14, 5 & 6	Solvent (Color)	Color 13	
D37	J10, 5 & 6	Catalyst 2	Color 28	
D38	J16, 1 & 2	Catalyst 3	Color 27	
D39	J16, 5 & 6	Color 12	Color 25	
D41	J15, 1 & 2	Color 5	Color 18	
D43	J9, 3 & 4	Color 10	Color 23	
D44	J9, 1 & 2	Color 11	Color 24	
D45	J10, 3 & 4	Catalyst 1	Color 29	
D46	J10, 1 & 2	Solvent (Catalyst)	Color 30	
F1	Replaceable Fuse	n/a	n/a	Check fuse condition if there is no power to the board or if communication is interrupted between the fluid station and the color change module.

Schematic Diagrams

System Pneumatic Schematic



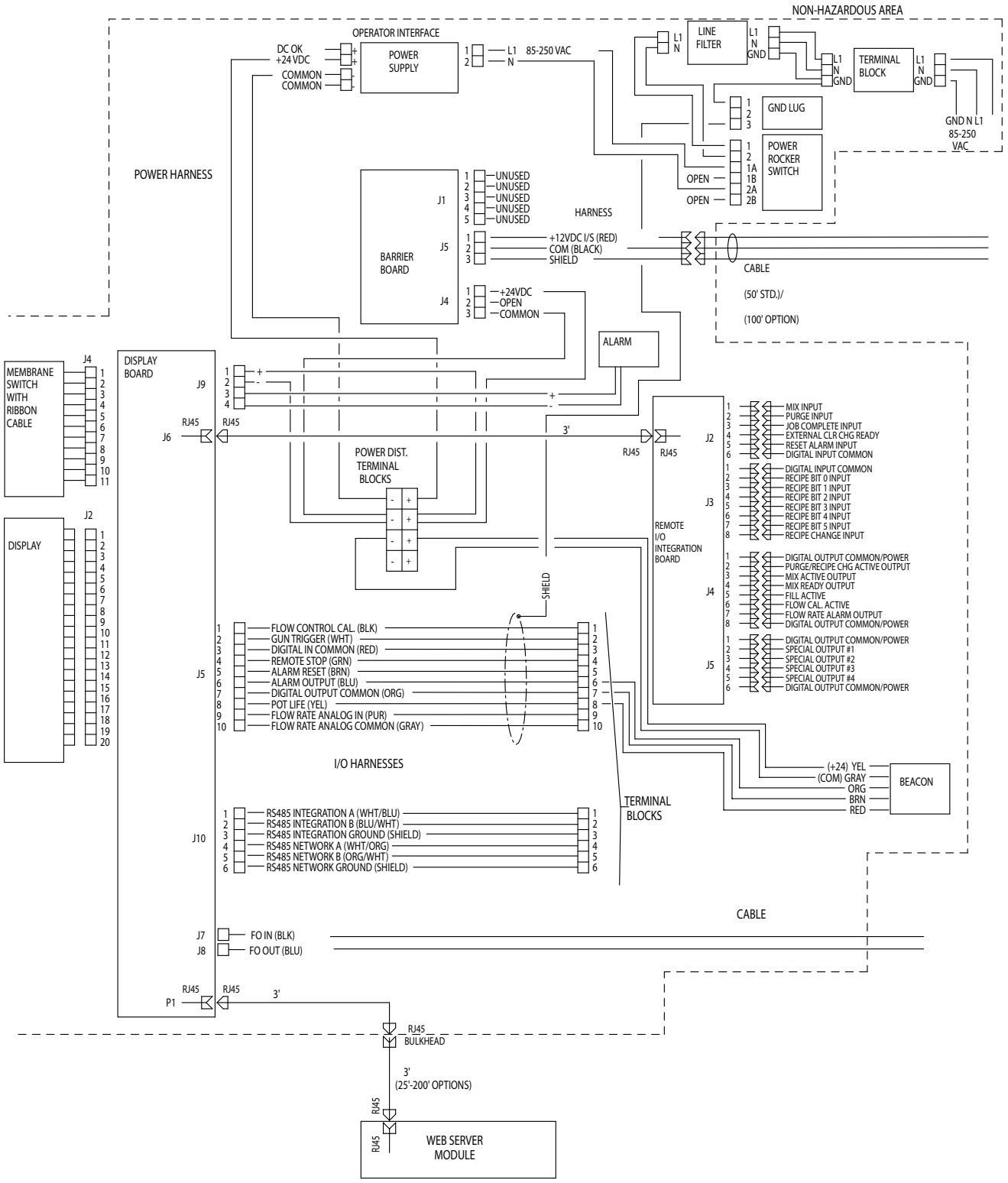
EasyKey Electrical Schematic



System Electrical Schematic

NOTE: The electrical schematic illustrates all possible wiring expansions in a ProMix 2KS system. Some components shown are not included with all systems.

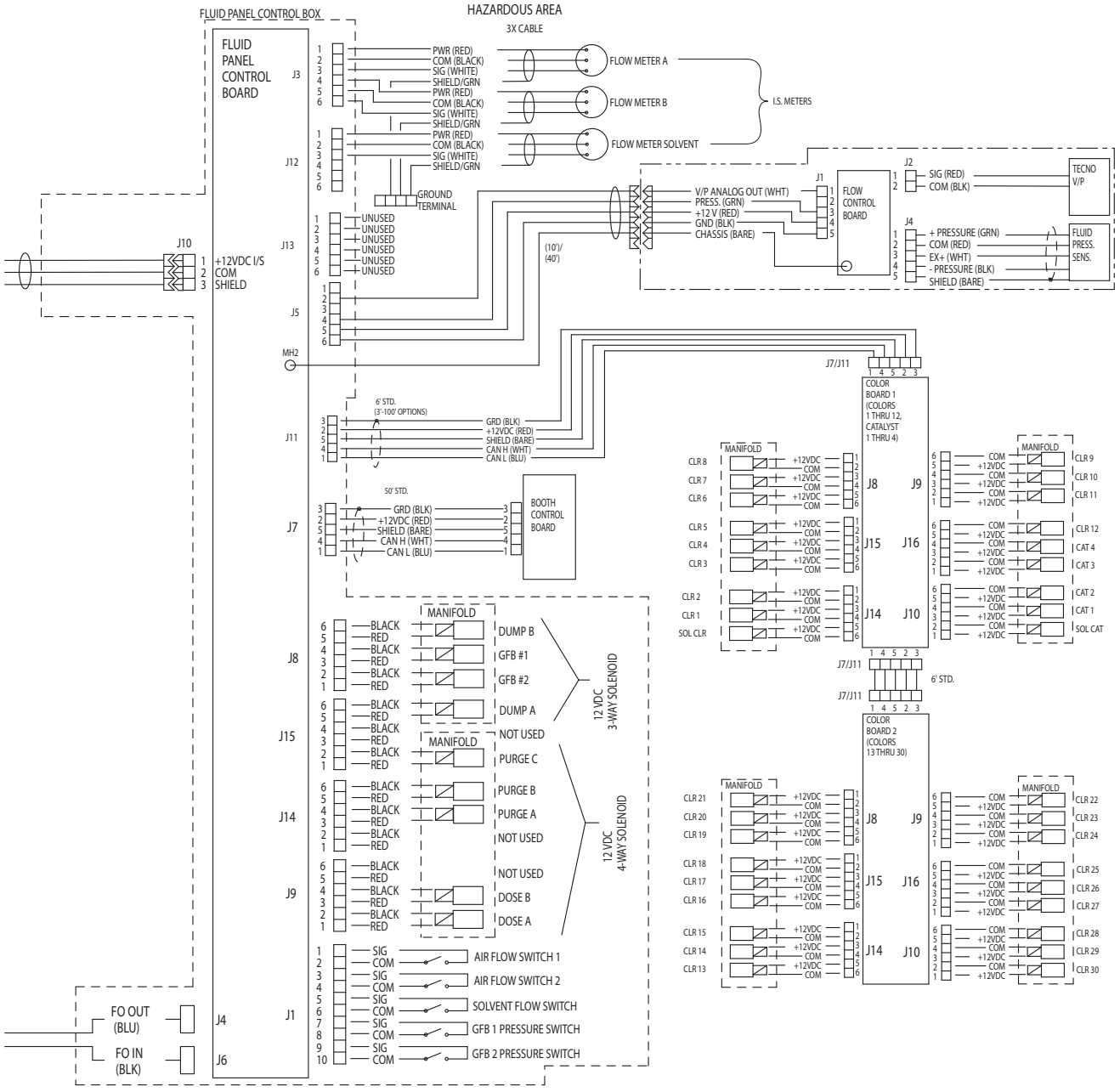
Non-Hazardous Area



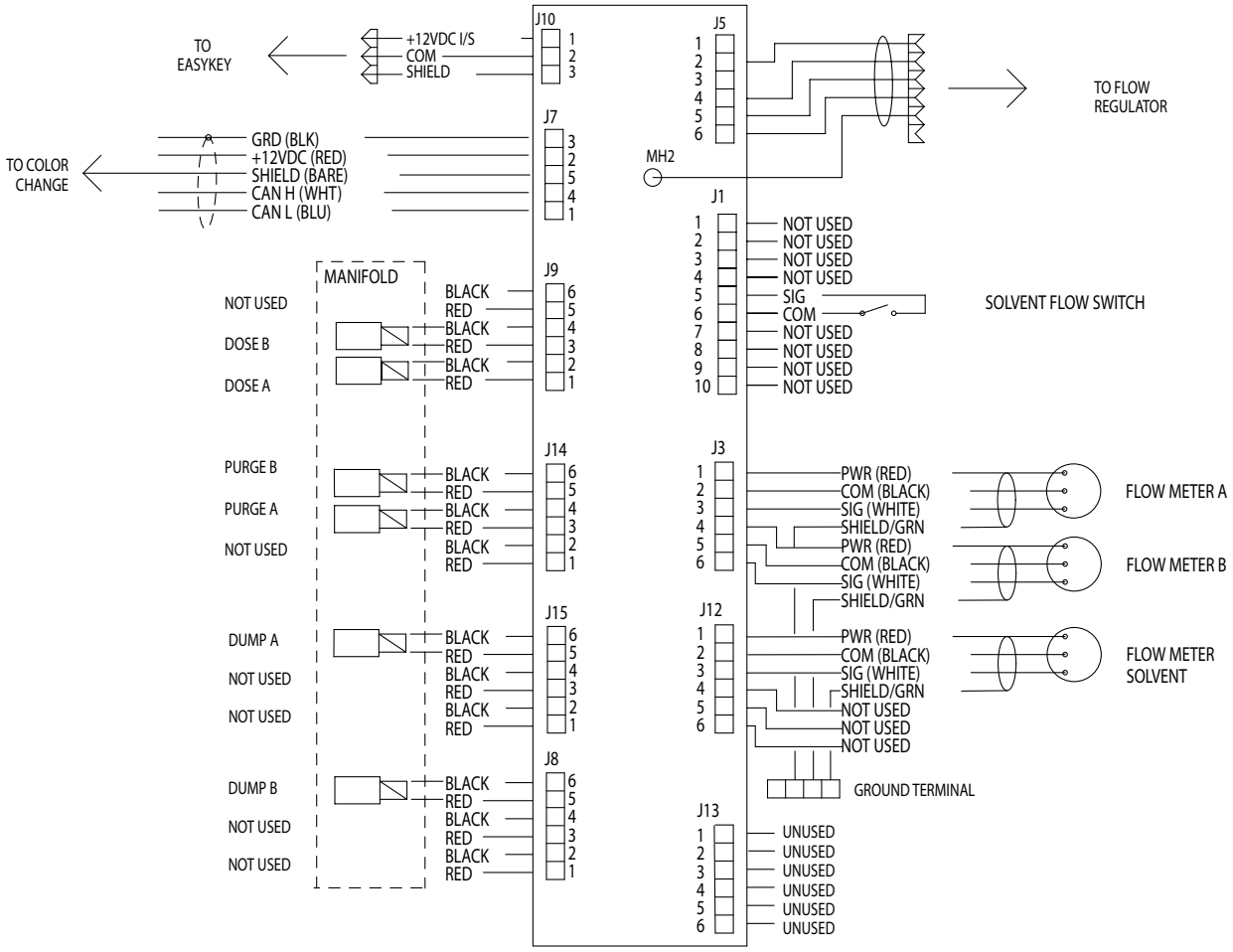
System Electrical Schematic

NOTE: The electrical schematic illustrates all possible wiring expansions in a ProMix 2KS system. Some components shown are not included with all systems.

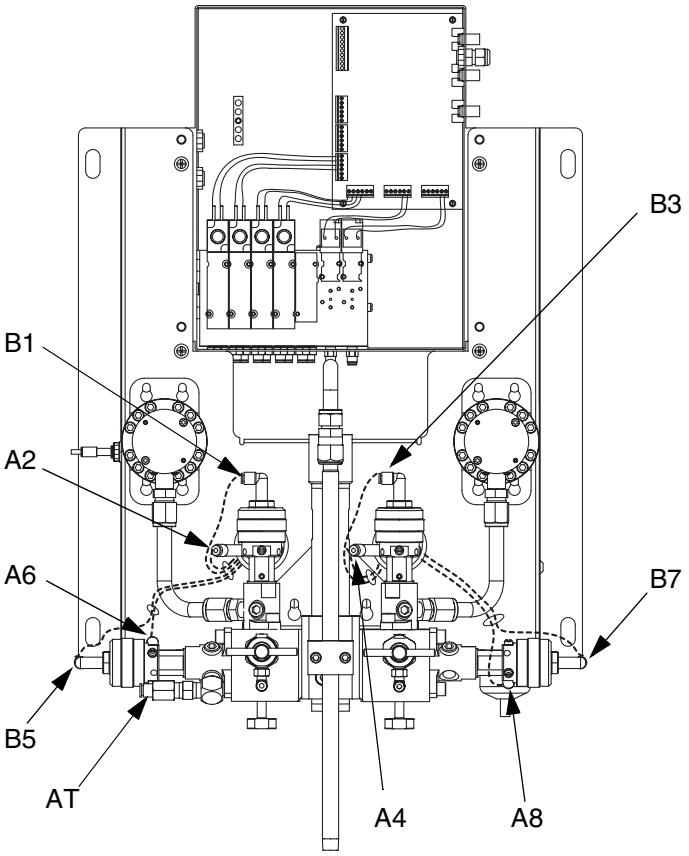
Hazardous Area



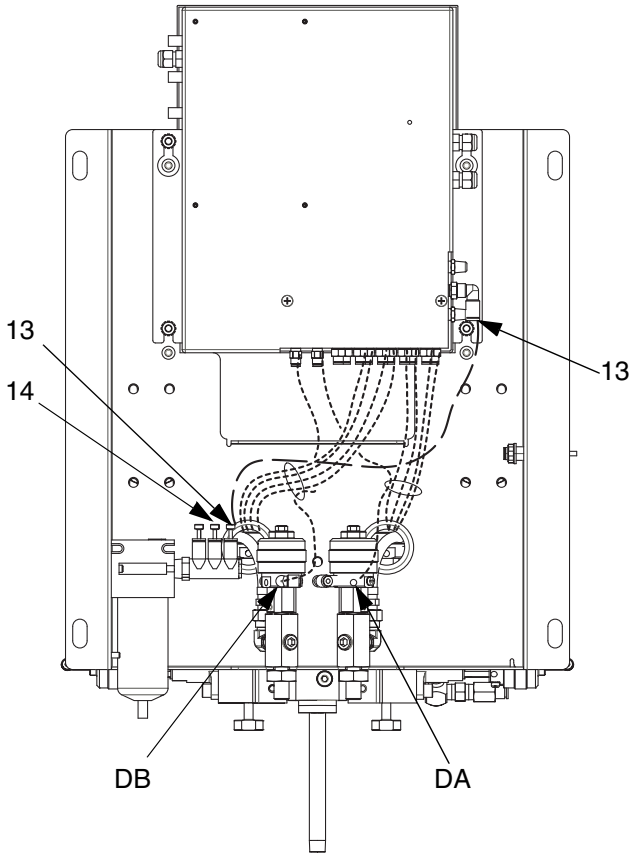
RoboMix Panel Board Schematic



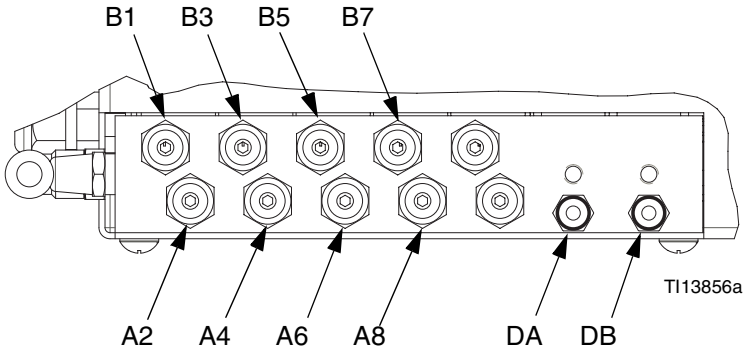
Tubing Schematic



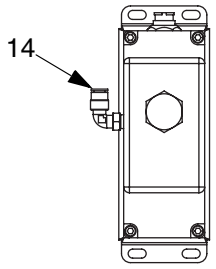
TI13857a



TI13858a



TI13856a



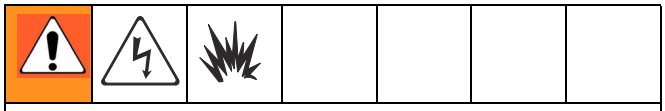
TI13859a

Table 6: Tubing Chart

Color	Description	Starting Point	Ending Point	Tube OD in. (mm)	Tube Ref. No.
Green	Dose A On	A2	A2	5/32 (4)	336
Green	Dose B On	A4	A4	5/32 (4)	336
Green	Purge A On	A6	A6	5/32 (4)	336
Green	Purge B On	A8	A8	5/32 (4)	336
Green	Dump A	DA	DA	5/32 (4)	Included in optional Dump Valve Kit 15V821 (Wall Panel) or 15V822 (RoboMix)
Green	Dump B	DB	DB	5/32 (4)	
Red	Dose A Off	B1	B1	5/32 (4)	337
Red	Dose B Off	B3	B3	5/32 (4)	337
Red	Purge A Off	B5	B5	5/32 (4)	337
Red	Purge B Off	B7	B7	5/32 (4)	337
Natural	Solenoid Air Supply	13	13	1/4 (6)	334
Natural	Flow Control Air Supply	14	14	1/4 (6)	User supplied. Connects air manifold to flow control regulator.
Natural	Purge Air Supply	Use as a separate line connected directly to the main shop air line. Do not connect to the unit's main air supply or to the air manifold (335).	AT	1/4 (6)	338

Service

Before Servicing



- To avoid electric shock, turn off EasyKey power before servicing.
- Servicing EasyKey display exposes you to high voltage. Shut off power at main circuit breaker before opening enclosure.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
- Do not substitute or modify system components as this may impair intrinsic safety.
- Read **Warnings**, page 9.

NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Flush system and follow **Pressure Relief Procedure**, page 12, if service time may exceed pot life time and before servicing fluid components.
2. Close main air shutoff valve on air supply line and on ProMix 2KS.
3. Shut off ProMix 2KS power (0 position). FIG. 14.
4. If servicing EasyKey, also shut off power at main circuit breaker.

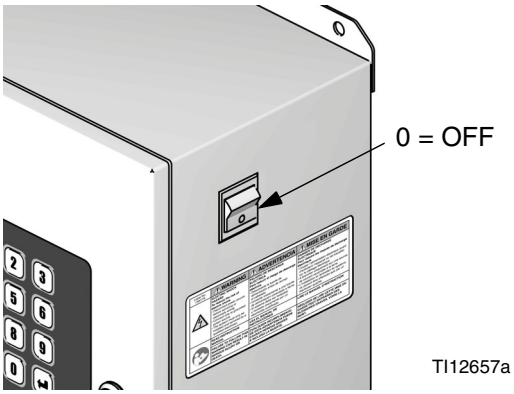


FIG. 14: Power Off

After Servicing

After servicing the system, be sure to follow the **Start Up** checklist and procedure in the ProMix 2KS Operation manual.

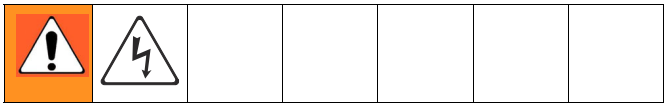
Servicing EasyKey

Updating Software

To update software, upload new software from your PC using the basic web interface. See manual 313386.

NOTE: If using the Graco Gateway in your system, disconnect its cable from the EasyKey before updating the ProMix 2KS software.

Replacing Display Board or Graphic Display



NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 38.
2. Unlock and open EasyKey door with its key.
3. Note position of all external connections (J4, J5, J6, J7, J8, J9, J10) to display board, then unplug the connectors. See FIG. 8 on page 20.
4. Remove 4 screws (210e) and the display board assembly (210b, 210c). FIG. 15.

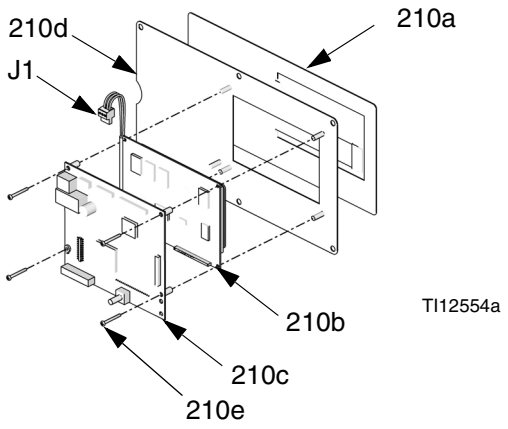
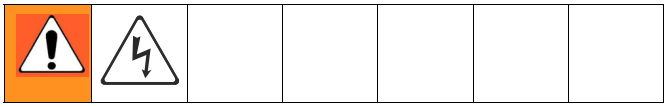


FIG. 15: Display Interface

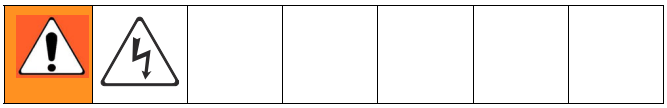
5. Disconnect graphic display power cable (J1) from the display board (210c).
6. Separate graphic display (210b) from display board (210c) [connector J2 on back of board].
7. To assemble the new parts, align connector J2 on the display board (210c) with the socket on the graphic display (210b). Press them together. See FIG. 15.
8. Reconnect the graphic display power cable (J1) to the display board (210c).
9. Mount display board assembly with screws (210e).
10. Plug all connectors into display board (210c). FIG. 15. Confirm that the cables do not pinch when opening or closing the door.
11. Locate the battery on the board (see FIG. 8 on page 20). Pull the strip to remove the protective isolator and activate the battery.
12. Close and lock EasyKey door with key.
13. Turn EasyKey power on to test display board.

Replacing Power Supply



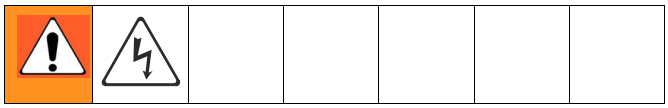
1. Follow **Before Servicing**, page 38.
2. Unlock and open EasyKey door with its key.
3. Note position of power supply input and output wires. See **EasyKey Electrical Schematic**, page 31. Disconnect wires from power supply (214f). See FIG. 16.
4. Remove power supply from din rail.
5. Install new power supply (214f). Reconnect input and output wires in positions noted in step 3.
6. Close and lock EasyKey door with key.
7. Turn on power at main circuit breaker.
8. Turn EasyKey power on to test operation.

Replacing Line Filter



1. Follow **Before Servicing**, page 38.
2. Unlock and open EasyKey door with its key.
3. Note position of line filter input and output wires. See **EasyKey Electrical Schematic**, page 31. Disconnect wires and remove line filter (214l) from bracket (214m). See FIG. 16.
4. Install new line filter (214l). Reconnect wires in positions noted in step 3.
5. Close and lock EasyKey door with key.
6. Turn on power at main circuit breaker.
7. Turn EasyKey power on to test operation.

Replacing Power Switch



1. Follow **Before Servicing**, page 38.
2. Unlock and open EasyKey door with its key.
3. Note position of power switch wires. See **EasyKey Electrical Schematic**, page 31. Disconnect wires and remove switch (202, FIG. 16).
4. Install new power switch (202). Reconnect wires in positions noted in step 3.
5. Close and lock EasyKey door with key.
6. Turn on power at main circuit breaker.
7. Turn EasyKey power on to test operation.

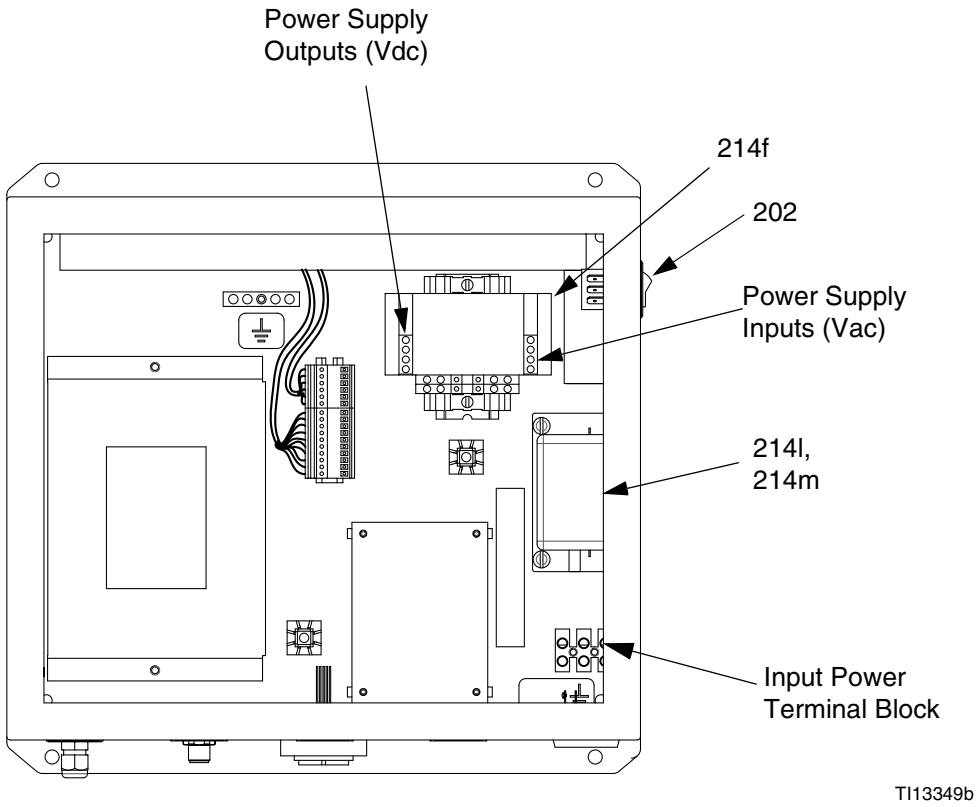


FIG. 16: Power Supply

Replacing Barrier Board

NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 38.
2. Unlock and open EasyKey door with its key.
3. Disconnect the cables and connectors from J1, J4, and J5. FIG. 18.
4. Using the security tool provided (Part No. 122239), remove 2 screws (214k) and the cover (214b). See FIG. 17.
5. Noting their location, remove 5 screws (214g, 214h) from the barrier board (214a). Do not remove the screw noted in FIG. 18. Remove board.
6. Apply thermal compound to the heatsink (Z) on the back of the new barrier board (214a). FIG. 18.
7. Install the new barrier board with the 5 screws (214g, 214h).
8. Install the cover (214b) with 2 screws (214k), using the security tool.
9. Connect cables to J1, J4, and J5.
10. Close and lock EasyKey door with key.
11. Turn on power at main circuit breaker.
12. Turn EasyKey power on to test operation.

Replacing Barrier Board Fuses

Fuse	Part No.	Description
F1, F2	114788	Power In Fuses; 2 amp, time lag
F3, F4	15D979	Power Out Fuses; 0.4 amp, quick acting

1. Follow **Replacing Barrier Board**, steps 1-4.
2. Remove the fuse (F1, F2, F3, or F4) from its fuse holder. FIG. 18.
3. Snap new fuse into holder.
4. Follow **Replacing Barrier Board**, steps 8-12.

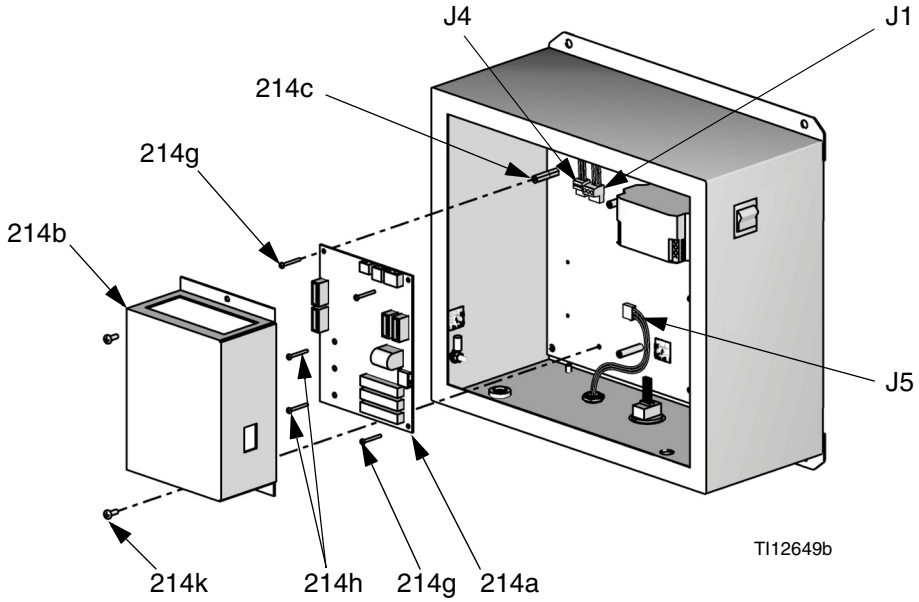
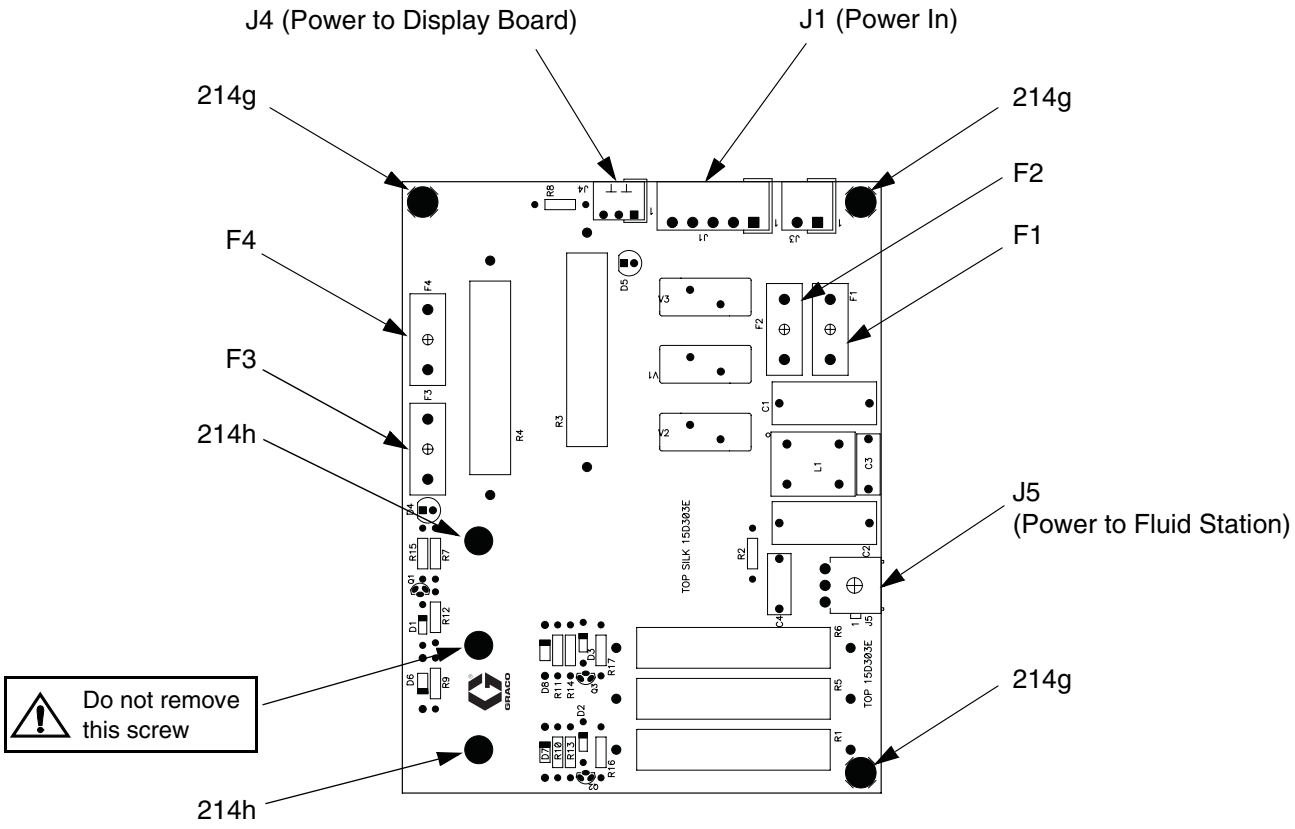
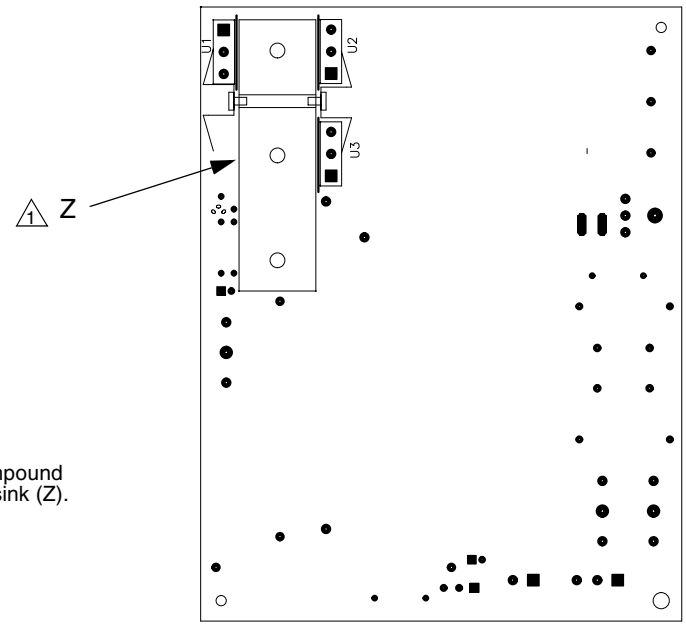


FIG. 17: Replacing Barrier Board



Front of Barrier Board, showing Fuses and Connectors



1 Apply thermal compound to surface of heatsink (Z).

Back of Barrier Board, showing Heatsink (Z)

FIG. 18: Barrier Board Connectors and Fuses

Replacing Air Filter Element

Removing a pressurized air filter bowl could cause serious injury. Depressurize air line before servicing.

Check the 5 micron air manifold filter daily and replace element (317a, Part No. 114228) as needed.

1. Close main air shutoff valve on air supply line and on unit. Depressurize air line.
2. Remove filter cover (A). See FIG. 19.
3. Unscrew filter bowl (B).
4. Remove and replace element (317a).
5. Screw filter bowl (B) on securely. Install cover (A).

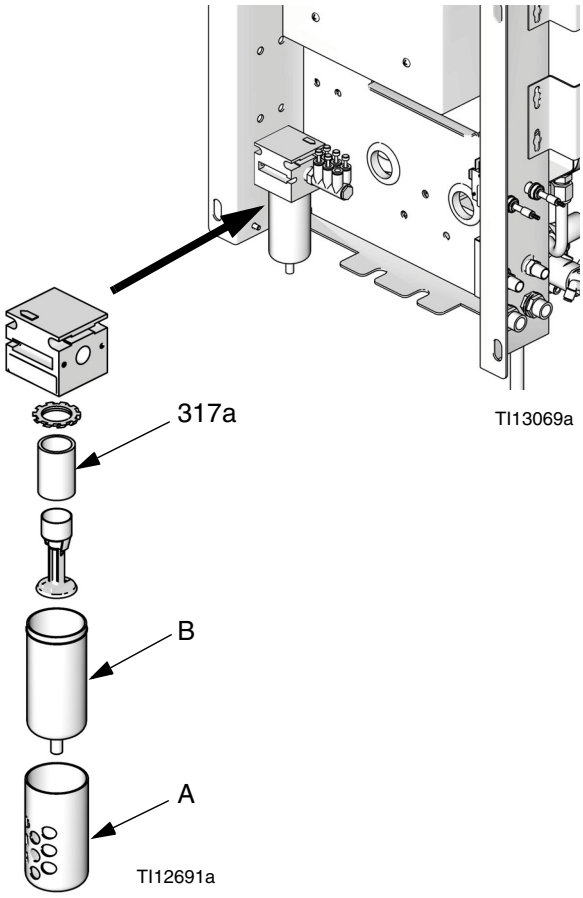
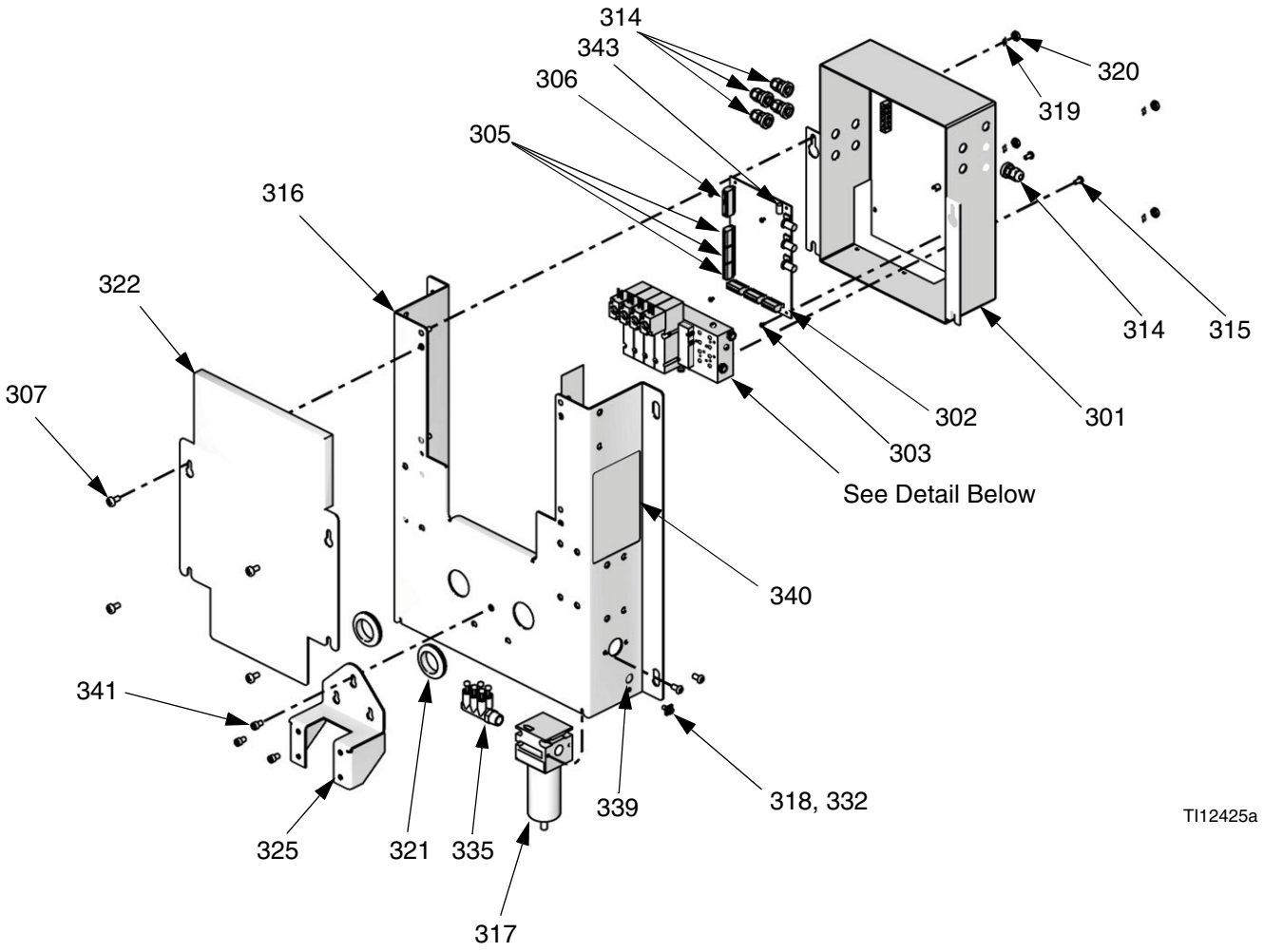


FIG. 19: Replacing Air Filter Element

Wall Mount Fluid Station

Preparation

1. Follow **Before Servicing**, page 38.
2. Loosen the 4 screws (307), then remove the Wall Mount Fluid Station cover (322). FIG. 20.



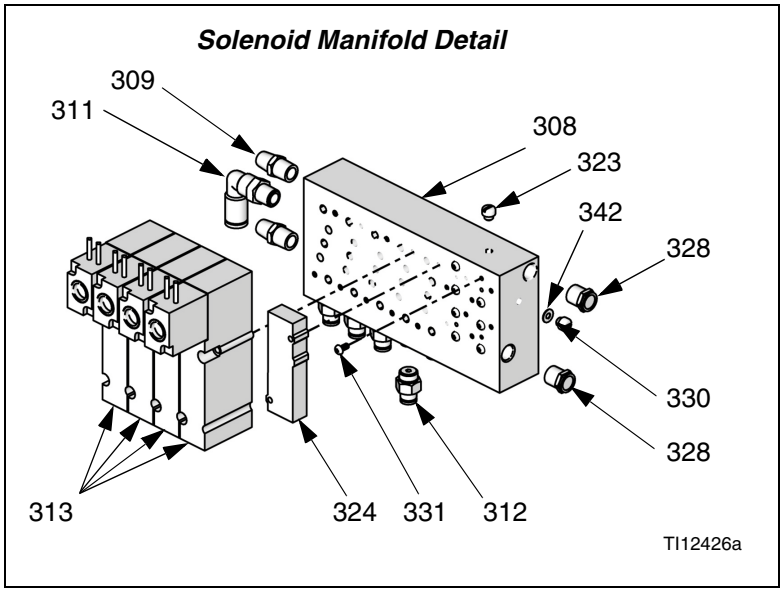


FIG. 20: Wall Mount Fluid Station

Replacing Control Board

NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Preparation**, page 44.
2. Disconnect fiber optic wires (J4, J6) and all cables (J1, J3, J5, J7, J8, J9, J12, J13, J14, J15) from control board (302). FIG. 21.
3. Remove 4 screws (303). Remove connector jam nuts on the outside of the enclosure (301). Remove control board (302). FIG. 20.
4. Install new control board (302) with 4 screws (303).
5. Connect cables to control board (302). FIG. 21. Insert fiber optic cable connectors (J4, J6) into board connectors (E), matching blue with blue, black with black, and hand-tighten connectors. Do not pinch or kink the fiber optic cables; the cables require a 2 in. (51 mm) bend radius.
6. Replace the cover (322).
7. Turn EasyKey power on to test operation.

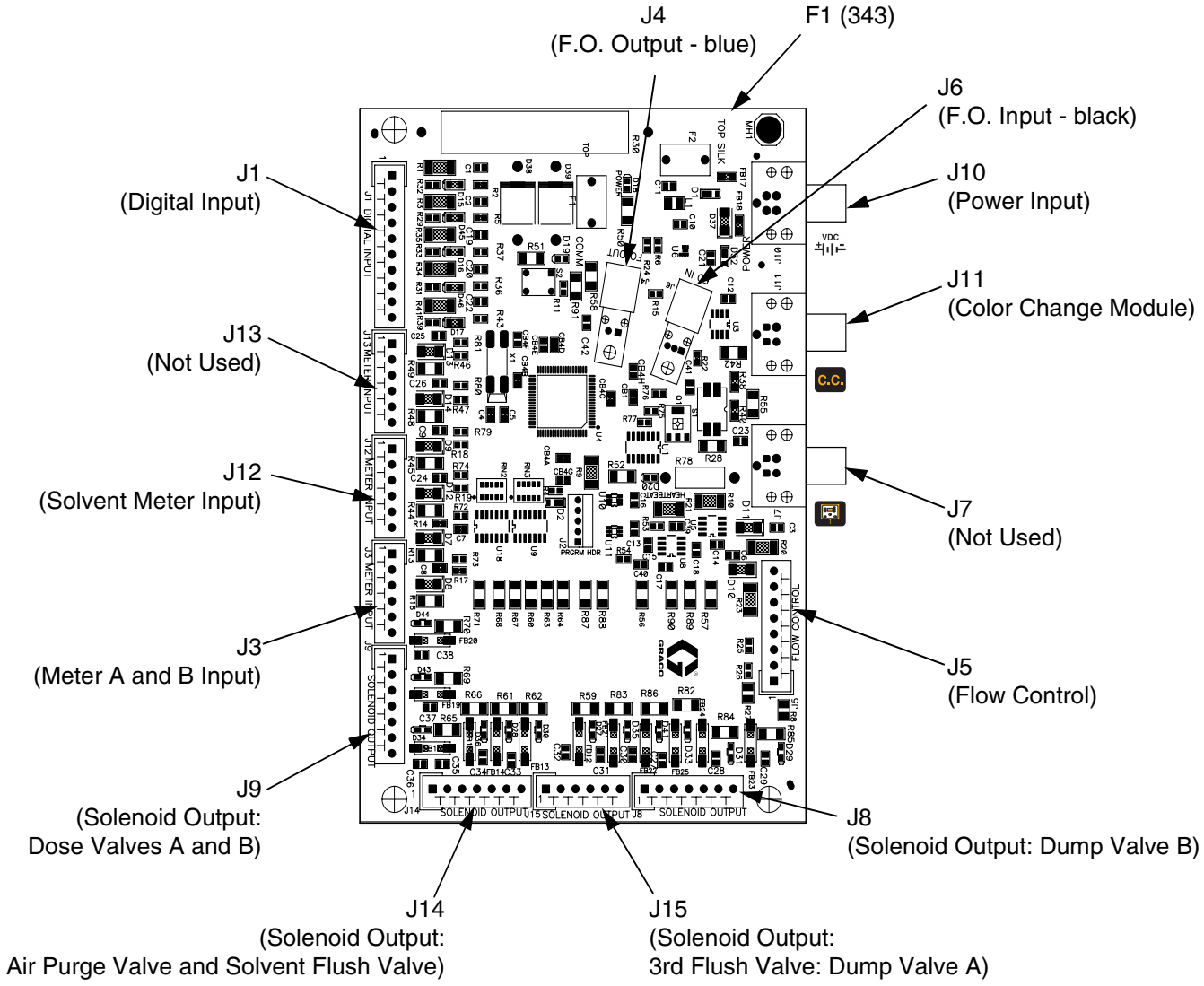


FIG. 21: 255765 Fluid Station Control Board

Replacing Solenoids

The Wall Mount Fluid Station has a minimum of 4 solenoids. If you have options installed, you have additional (optional) solenoids for each. See Table 7 and **Schematic Diagrams**, page 30.

To replace a single solenoid:

1. Follow **Preparation**, page 44, and shut off power at main circuit breaker.
2. Disconnect 2 solenoid wires from control board (302). See FIG. 21 and **System Electrical Schematic**, page 33.
3. Unscrew 2 screws (P) and remove solenoid (313). FIG. 22.
4. Install new solenoid (313).
5. Connect 2 wires (N) to control board (302). Solenoid wires are polarized (red +, black –). Refer to **System Electrical Schematic**, page 33.
6. Replace the cover (322).

Replacing Control Board Fuse

Replacing a fuse (F1 or F2) with a non-Graco fuse voids the IS system safety approval.

Fuse	Part No.	Description
F1, F2	123690	Fuse; 125 mA, intrinsically safe

1. Follow **Preparation**, page 44.
2. Locate fuse F1 or F2 on the control board. See FIG. 22. Remove the screw and metal strap.
3. Pull the fuse away from the board.
4. Install the new fuse (343).
5. Replace the cover (322).

Table 7: Wall Panel Solenoids

Solenoid	Actuates	Fuse
Standard		
1	Dose Valve A	F1
2	Dose Valve B	F1
3	Air Purge Valve	F1
4	Solvent Purge Valve	F1
Optional		
5	Third Flush Valve	F2
6	Dump Valve A	F2
7	Dump Valve B	F2
8	Gun Flush Box 1	F2
9	Gun Flush Box 2	F2

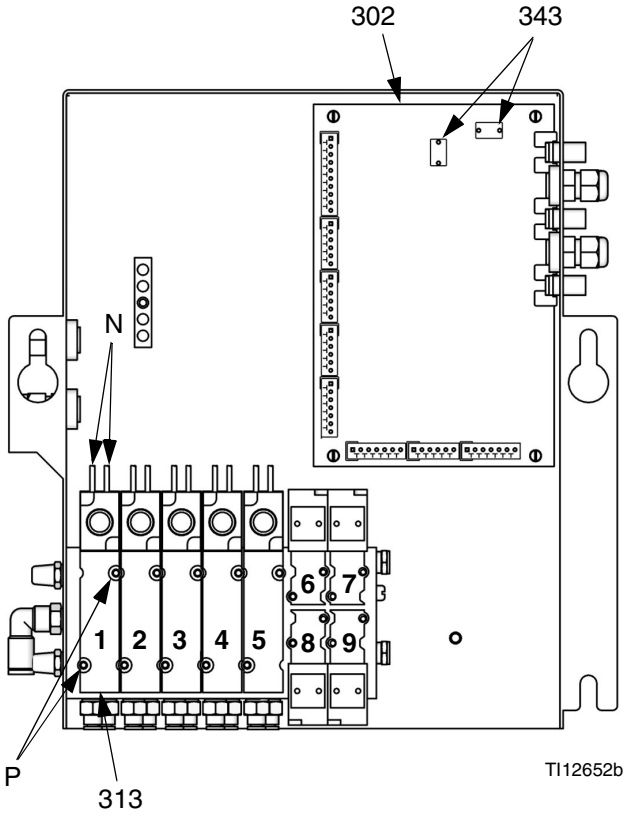


FIG. 22: Replacing Solenoids and Fuse

Servicing Flow Meters Mounted on Wall Panel

Coriolis Meter

1. Follow **Before Servicing**, page 38.
2. To remove and service the Coriolis meter, see manual 313599.

G3000 or G3000HR Meter

Removal

1. Follow **Before Servicing**, page 38.
2. Unscrew cable connector (CC) from meter (M). FIG. 23.
3. Unscrew four 1/4-20 screws (MS) holding the meter mounting plate (MP). FIG. 23.
4. Unscrew fluid line from meter inlet (P).
5. Unscrew meter (M) from dose valve connector (H). FIG. 23.
6. Service meter as instructed in the meter manual 308778.

Installation

1. Screw meter (M) securely onto the dose valve connector (H), using a wrench.

NOTE: To avoid leakage, secure the meter (M) to the dose valve connector (H) before connecting it to the fluid station.

2. Secure meter (M) and plate (MP) to fluid station with screws (MS).

NOTE: You must assemble the meter sensor to the meter body before connecting the cable to the sensor for the meter to function properly.

3. Connect meter cable (CC). See FIG. 23.
4. Connect fluid line (P).
5. Calibrate meter as instructed in ProMix Operation manual.

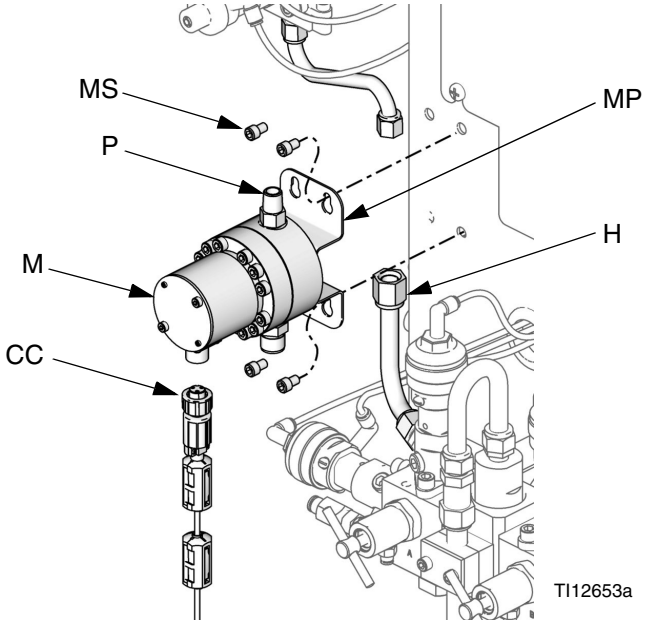
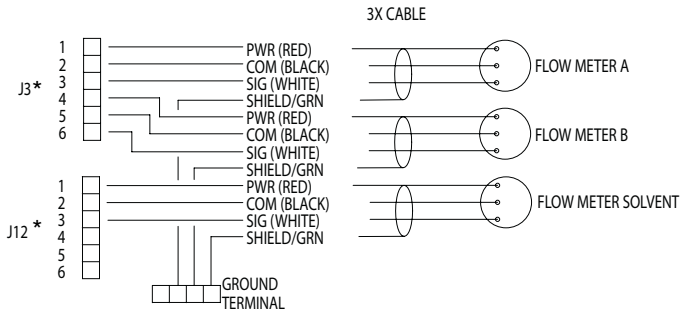


FIG. 23: G3000/G3000HR Flow Meters

Cable	Length
241799	5 ft (1.52 m)
241800	16 in. (406 mm)
241801	13 in. (330 mm)



*Connectors on Fluid Station Control Board

FIG. 24: Meter Cable Schematic

Servicing Fluid Manifold

Removal

1. Follow **Servicing Flow Meters Mounted on Wall Panel, Removal** steps 1-5, page 48.
2. Disconnect air and fluid lines from the manifold (4).
3. Holding onto the fluid manifold (4), loosen the three screws (341) holding the bracket (325) to the fluid station. Lift the fluid manifold (4) and pull it away from the panel. Service as instructed in the Fluid Mix Manifold manual 312781.

Installation

1. Secure the fluid manifold (4) and mounting plate (325) with three screws (341).
2. Install meters. See **Installation** steps 1-3, page 48.
3. Connect air and fluid lines.
4. Calibrate meters as instructed in ProMix Operation manual.

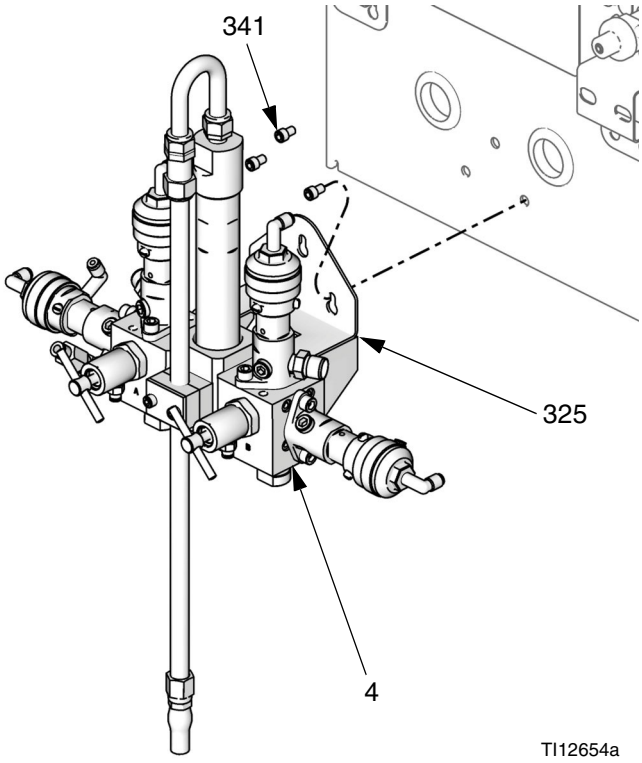


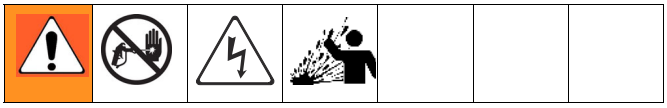
FIG. 25: Fluid Manifold

Servicing Color Change Module, Color/Catalyst Valves, and Dump Valves

1. Follow **Before Servicing**, page 38.
2. See manual 312787 for the color change module.
3. See manual 312783 for the color/catalyst valve stacks.
4. See manual 312786 for the dump valve kits.
5. See manual 312782 to service an individual valve.

RoboMix Fluid Station

Preparation



1. Follow **Before Servicing**, page 38.
2. Remove the RoboMix cover (410). FIG. 26.
3. Note the position of all RoboMix hoses, then disconnect them.

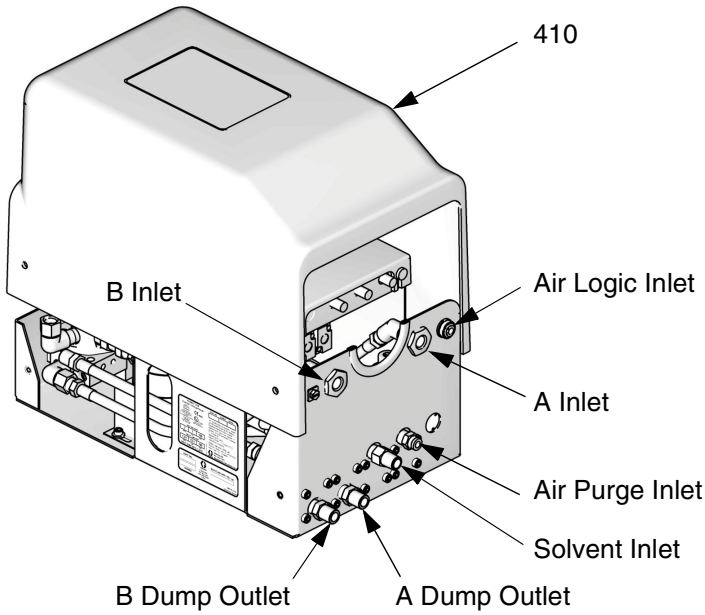


FIG. 26: RoboMix Fluid Station

Replacing Control Board

1. Follow **Preparation**, page 50.
2. Remove the control board cover (427). FIG. 27.

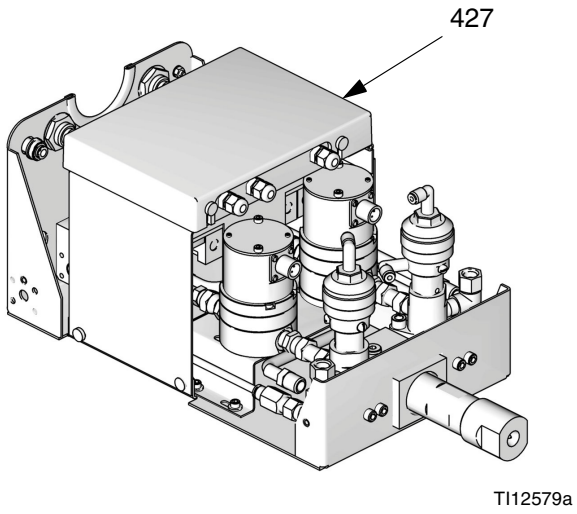


FIG. 27: Remove Control Board Cover

3. Disconnect fiber optic wires (J4, J6) and all cables (J1, J3, J5, J7, J8, J9, J12, J13, J14, J15) from control board (426). FIG. 29.
4. Remove 4 screws (428). Remove control board (426). FIG. 28.

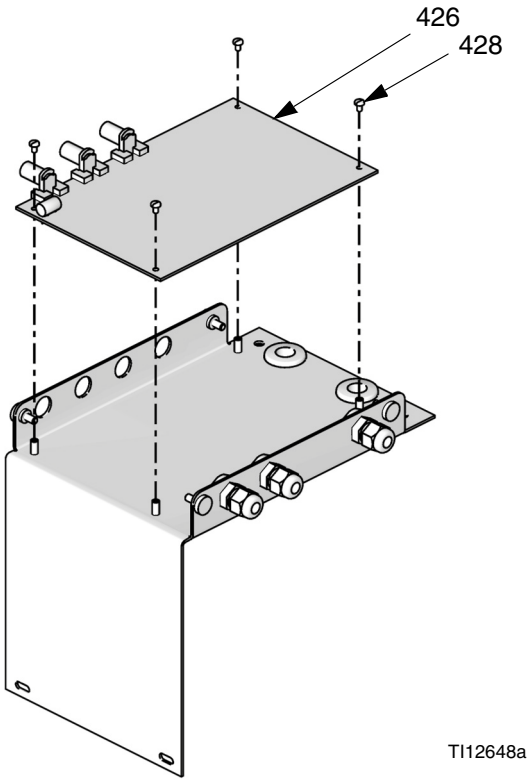


FIG. 28: Remove Control Board

5. Install new control board (426) with 4 screws (428).
6. Connect cables to control board (426). FIG. 29. Insert fiber optic cable connectors (J4, J6) into board connectors (E), matching blue with blue, black with black, and hand-tighten connectors (E). Do not pinch or kink the fiber optic cables; the cables require a 2 in. (51 mm) bend radius.
7. Reinstall covers (427, 410).
8. Reconnect all hoses. FIG. 26.
9. Turn EasyKey power on to test operation.

Replacing Control Board Fuse

Replacing the fuse with a non-Graco fuse voids the IS system safety approval.

Fuse	Part No.	Description
F1	123690	Fuse; 125 mA, intrinsically safe

1. Follow **Preparation**, page 44.
2. Locate fuse F1 on the control board. See FIG. 29. Remove the screw and metal strap.
3. Pull the fuse away from the board.
4. Install the new fuse (497).
5. Reinstall covers (427, 410).

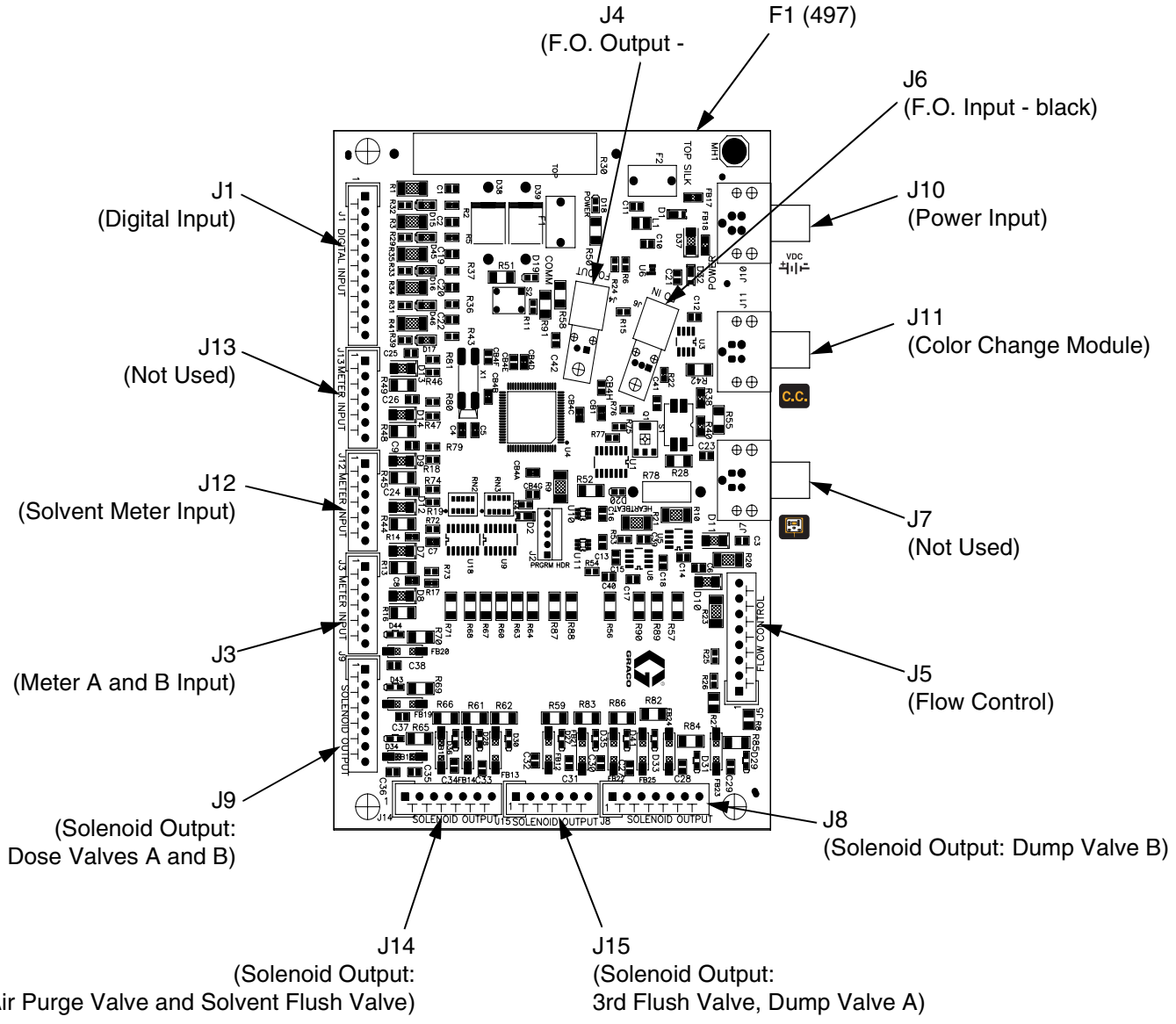


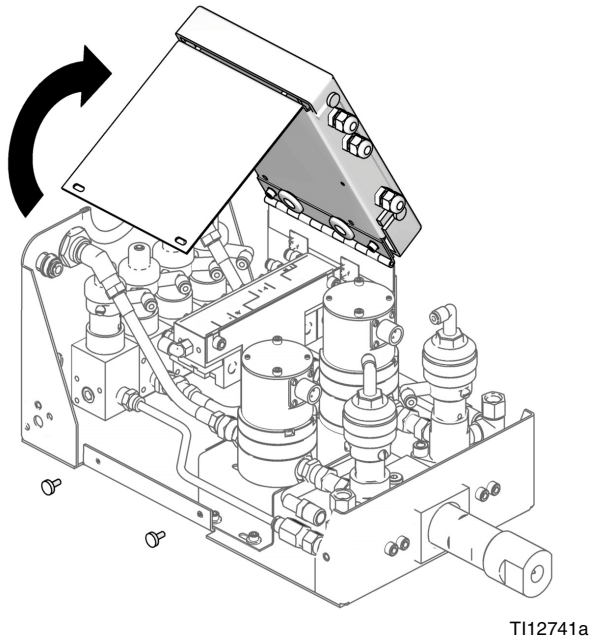
FIG. 29: 255765 Fluid Station Control Board

Replacing Solenoids

The RoboMix Fluid Station has a minimum of 4 solenoids. If you have optional 3rd flush valve or dump valve kits installed, you have additional (optional) solenoids for each additional valve. Refer to Table 8 and **Schematic Diagrams**, page 30.

To replace a single solenoid:

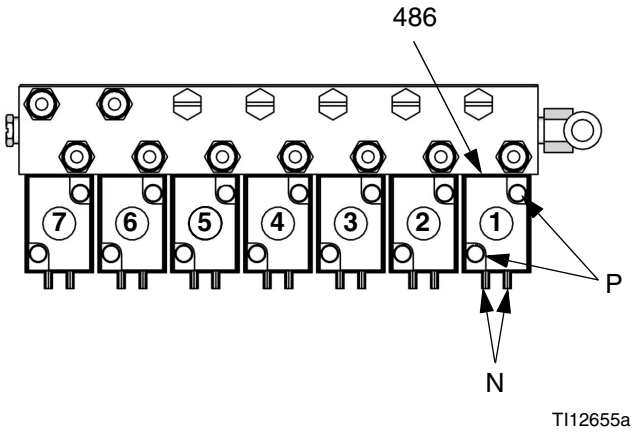
1. Follow **Preparation**, page 50. Shut off power at the main circuit breaker.
2. Remove the control board cover (427). FIG. 27.
3. Disconnect 2 solenoid wires from control board (426). See FIG. 29 and **System Electrical Schematic**, page 33. Swing the control board up and out of the way. FIG. 30.



TI12741a

FIG. 30: Accessing Solenoids and Meters

4. Unscrew 2 screws (P) and remove solenoid (486). See FIG. 31 and Table 8.



TI12655a

FIG. 31: RoboMix Solenoids

Table 8: RoboMix Solenoids

Solenoid	Actuates
Standard	
1	Dose Valve A
2	Dose Valve B
3	Air Purge Valve
4	Solvent Purge Valve
Optional	
5	3rd Purge Valve
6	Dump Valve A
7	Dump Valve B

5. Install new solenoid (486).
6. Connect 2 wires (N) to control board (426). Solenoid wires are polarized (red +, black –). Refer to **System Electrical Schematic**, page 33.
7. Reinstall covers (427, 410).

G250 and G250HR Flow Meters

Removal

1. Follow **Preparation**, page 50.
2. Unscrew cable from meter connector (CC). FIG. 32.
3. Unscrew M6 screws (442) and washers (440) from bottom of meter mounting plate (438) with socket wrench. FIG. 32.
4. Disconnect the fluid line from the meter inlet (P).
5. Disconnect the meter outlet (H) fitting from the dose valve.
6. Service meter as instructed in the meter manual 308778.

Installation

1. Screw meter outlet fitting (H) securely onto the dose valve inlet, using a wrench.

NOTE: To avoid leakage, secure the meter outlet fitting (H) to the dose valve before connecting the meter to the plate (438).

2. Secure meter (M) to plate (438) with screws and washers (442, 440).

NOTE: You must assemble the meter sensor to the meter body before connecting the cable to the sensor for the meter to function properly.

3. Connect cable to cable connector (CC). FIG. 32.
4. Connect fluid line to meter inlet fitting (P).
5. Calibrate meter as instructed in ProMix Operation manual.
6. Place board into its correct position and reassemble RoboMix Panel.

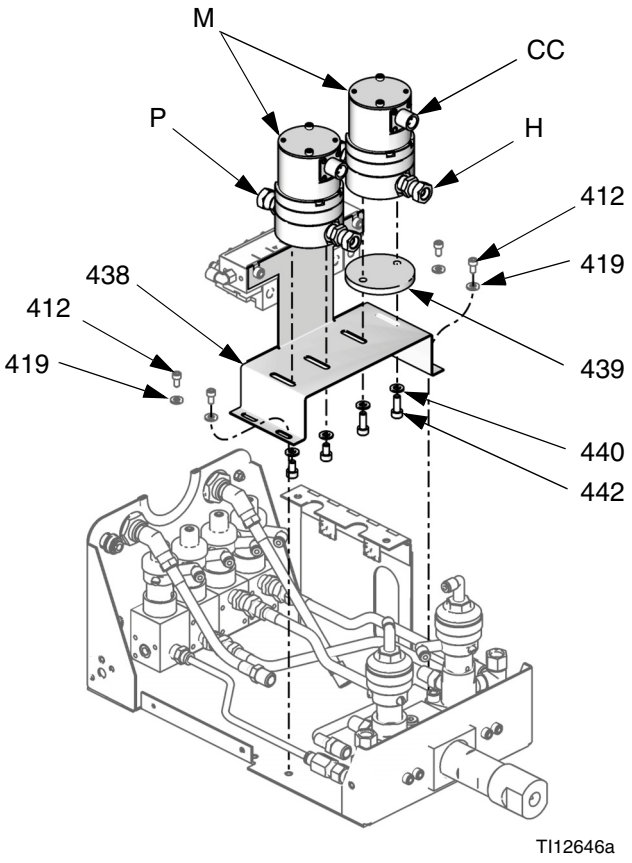
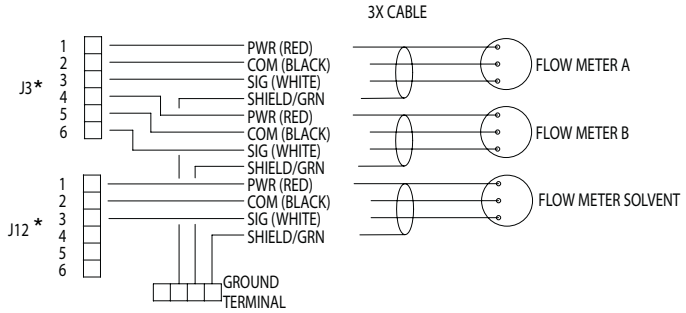


FIG. 32: G250/G250HR Flow Meters



*Connectors on Fluid Station Control Board

FIG. 33: Meter Cable Schematic

Servicing RoboMix Manifold

Manifold Service Kit 15V480 is available. Kit parts are marked with an asterisk, for example (502*). For best results, use all parts in the kit. Lubricate all o-rings during assembly.

1. Follow **Preparation**, page 50.
2. Disconnect all fluid and air lines from the RoboMix manifold (477).
3. Unscrew the flexible mixer (474) from the integrator cap (511).
4. Remove the screws (403, 478) and the spacer (465, on the B side). Remove the manifold assembly (477) from the RoboMix fluid station. FIG. 34.

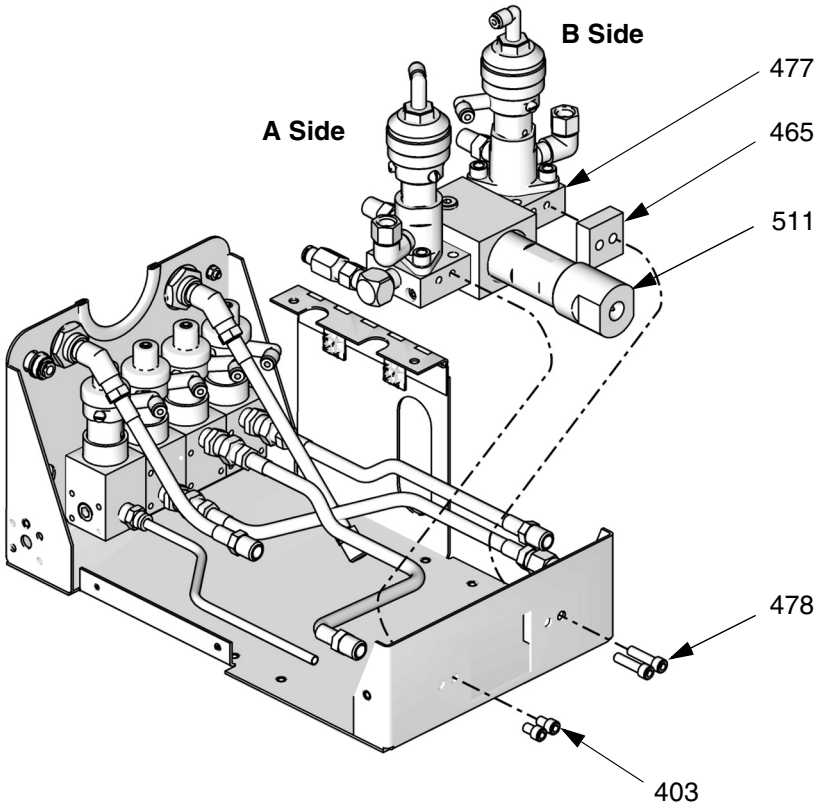


FIG. 34: RoboMix Manifold

5. Unscrew the integrator cap (511) and housing (510). Inspect the mixer (508) and mix cap (509). Replace the o-rings (504*). FIG. 35.

6. Unscrew the integrator manifold plug (507). Remove the integrator base (503). Replace both o-rings (502*, 504*).

NOTICE

Keep A side and B side parts separate when disassembling, to prevent contamination during reassembly.

7. Unscrew the A and B dose valves (521) from the valve adapters (517). Replace the o-rings (518*).

   NOTE: To repair the dose valves (521), see manual 312782.

8. Remove the screws (520) and adapters (517). Inspect the seat (516). Replace the o-rings (515*).

9. Remove the screws (513) and the A and B valve mounts (512). Replace the o-rings (505*).

10. Remove the seal screw (506) from the integrator housing (501). Replace the o-ring (505*).

11. Remove the check valves (519*) from each valve adapter (517) and from the elbow (528) on the A side of the manifold. Replace all three check valves. The arrow on the check valves must face toward the manifold.

12. Remove the pipe plugs (522*) from each valve adapter (517). Replace the plugs.

13. Reassemble in reverse order, following all assembly notes in FIG. 35.

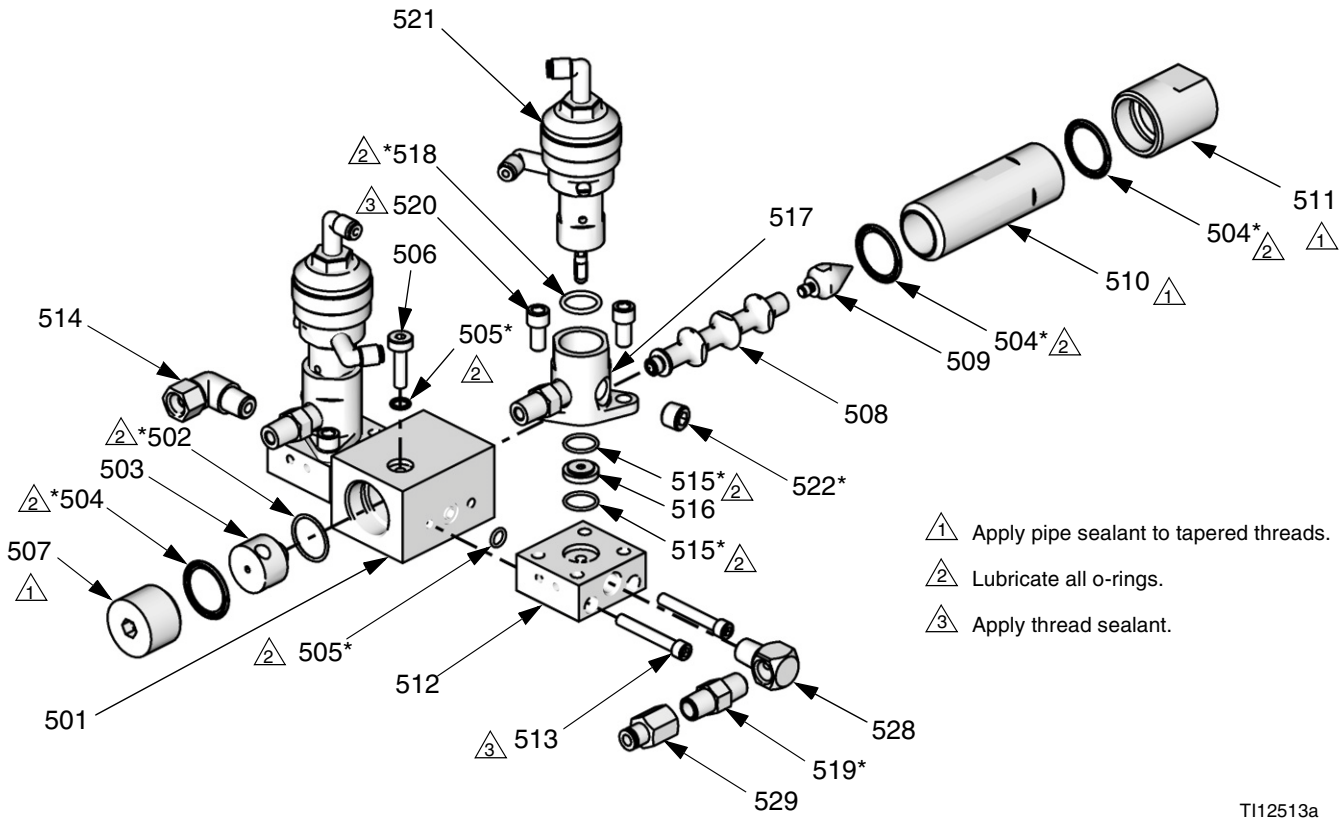
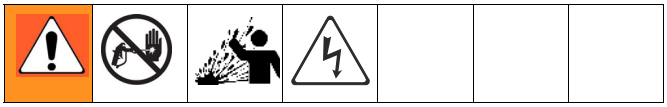


FIG. 35: Manifold Repair

Servicing Flow Control

Preparation



1. Follow **Before Servicing**, page 38.
2. Disconnect all air and fluid lines from the flow control regulator.
3. Disconnect the flow control cable from connector (624). FIG. 37.
4. Remove the four screws (605) holding the air plate (607) to the housing (611). Carefully lift the plate off the housing and disconnect the three cables from J1, J2, and J4 on the circuit board (618). FIG. 36.

Servicing the Regulator and Pressure Sensor

Regulator Service Kit 15G843 is available. Kit parts are marked with an asterisk, for example (602*). For best results, use all parts in the kit.

Sensor Service Kit 15G867 is available to service the pressure sensor only. Kit parts are marked with a symbol, for example (602‡). For best results, use all parts in the kit.

1. Follow **Preparation**, above.
2. Remove the four screws (605) and the nut (601) from the underside of the air plate (607). Separate the air plate and fluid plate.
3. Unscrew the pressure sensor (620) from the fluid plate (606).

   NOTE: If you are only replacing the pressure sensor kit 15G867, skip to step 6.

4. Remove the plug (615) and o-ring (604) from the top of the fluid plate (606). Remove the parts of the diaphragm assembly (613, 610, 609, 612, 617, 616). Remove and discard the dowels (623).
5. Reassemble the diaphragm assembly using the new parts from the kit. Be sure the AIR SIDE of the diaphragm (617) faces down. Torque the nut (601) to 8-10 in-lb (0.9-1.1 N•m).
6. Install a new o-ring (602) on the pressure sensor (620) and screw the sensor into the fluid plate (606).
7. Reinstall the fluid plate on the air plate. Be careful not to pinch the pressure sensor cable. Torque the screws (605) to 30-40 in-lb (3.4-4.5 N•m).
8. Reconnect the three cables to J1, J2, and J4 on the circuit board (618). FIG. 36.
9. Reattach the air plate (607) to the housing (611). Torque the screws (605) to 30-40 in-lb (3.4-4.5 N•m).
10. Reattach the flow control cable and all air and fluid lines.

Servicing the Flow Control Board

1. Follow **Before Servicing**, page 38.
2. Remove the four screws (605) holding the bracket (614) to the housing (611). FIG. 37.
3. Carefully separate the bracket from the housing and disconnect the three cables from J1, J2, and J4 on the circuit board (618). FIG. 36.
4. Remove the screws (621). Replace the old board with the new board.
5. Reconnect the three cables to J1, J2, and J4 on the circuit board (618). FIG. 36.
6. Reattach the bracket (614) to the housing (611). Torque the screws (605) to 30-40 in-lb (3.4-4.5 N•m).

Servicing the V/P Valve

1. Follow **Before Servicing**, page 38.
2. Remove the four screws (605) holding the bracket (614) to the housing (611). FIG. 37.
3. Carefully separate the bracket from the housing and disconnect the V/P valve cable from J2 on the circuit board (618). FIG. 36.
4. Remove the two screws (619a) and o-rings (619b). Install the new valve (619) with new screws and o-rings.
5. Reconnect the V/P valve cable to J2 on the circuit board (618). FIG. 36.
6. Reattach the bracket (614) to the housing (611). Torque the screws (605) to 30-40 in-lb (3.4-4.5 N•m).

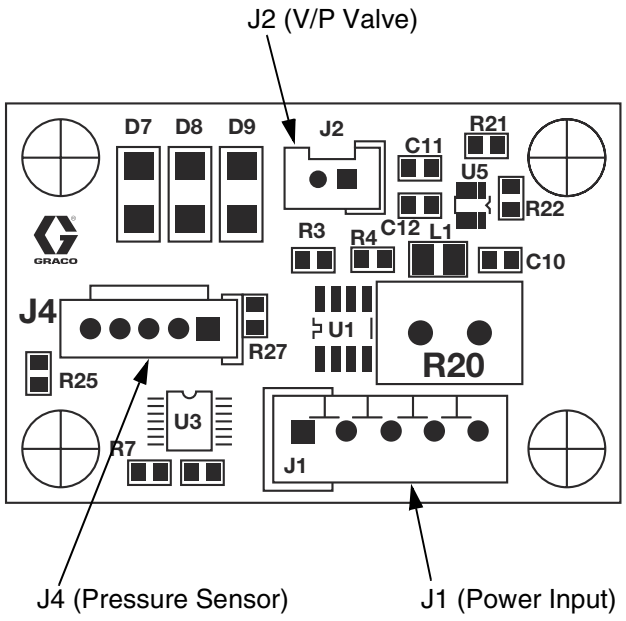
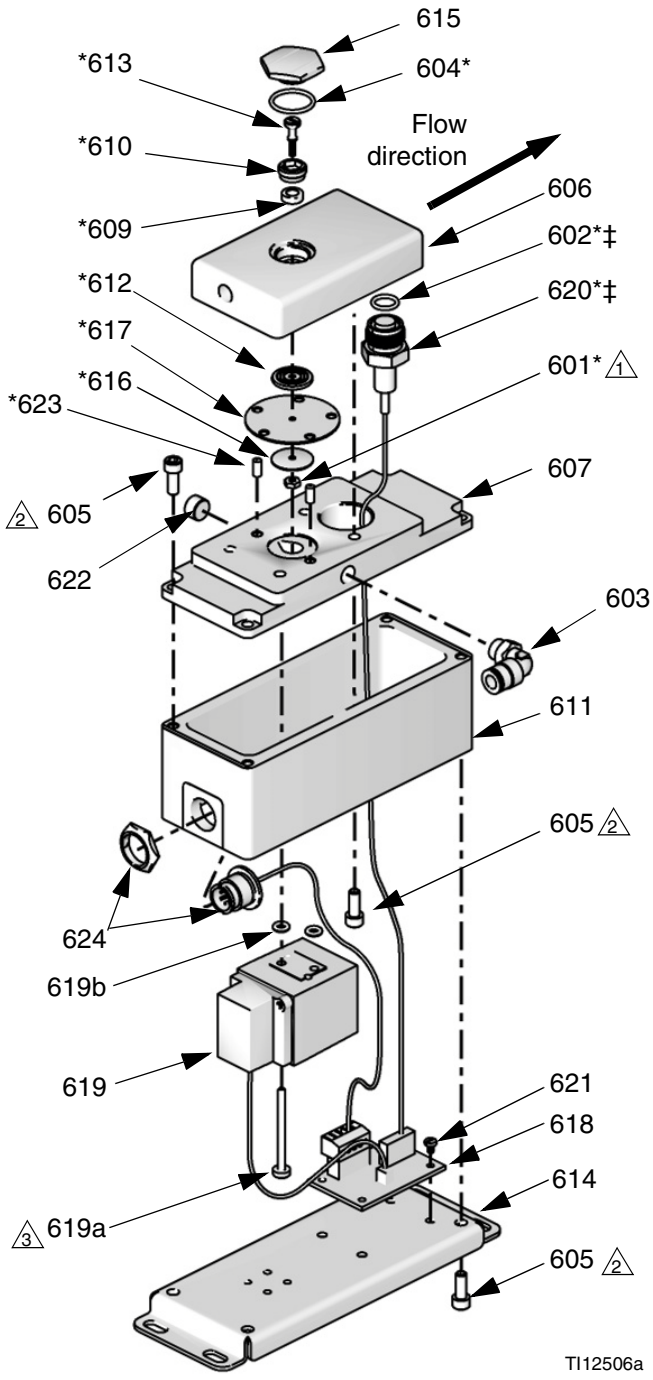


FIG. 36: 249179 Flow Control Board



1 Torque to 8-10 in-lb (0.9-1.1 N•m)

2 Torque to 30-40 in-lb (3.4-4.5 N•m)

3 Torque to 5-7 in-lb (0.6 -0.8 N•m)

FIG. 37: Flow Control

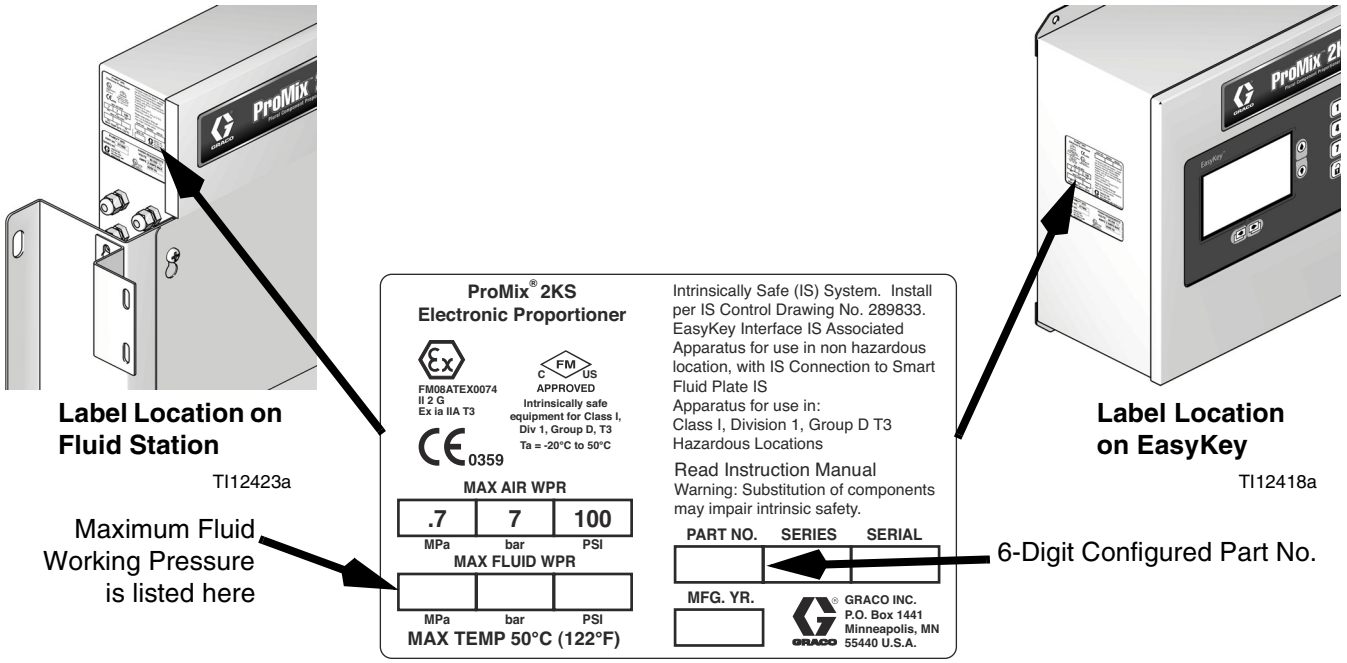
Parts

ProMix 2KS Automatic Wall Panel System

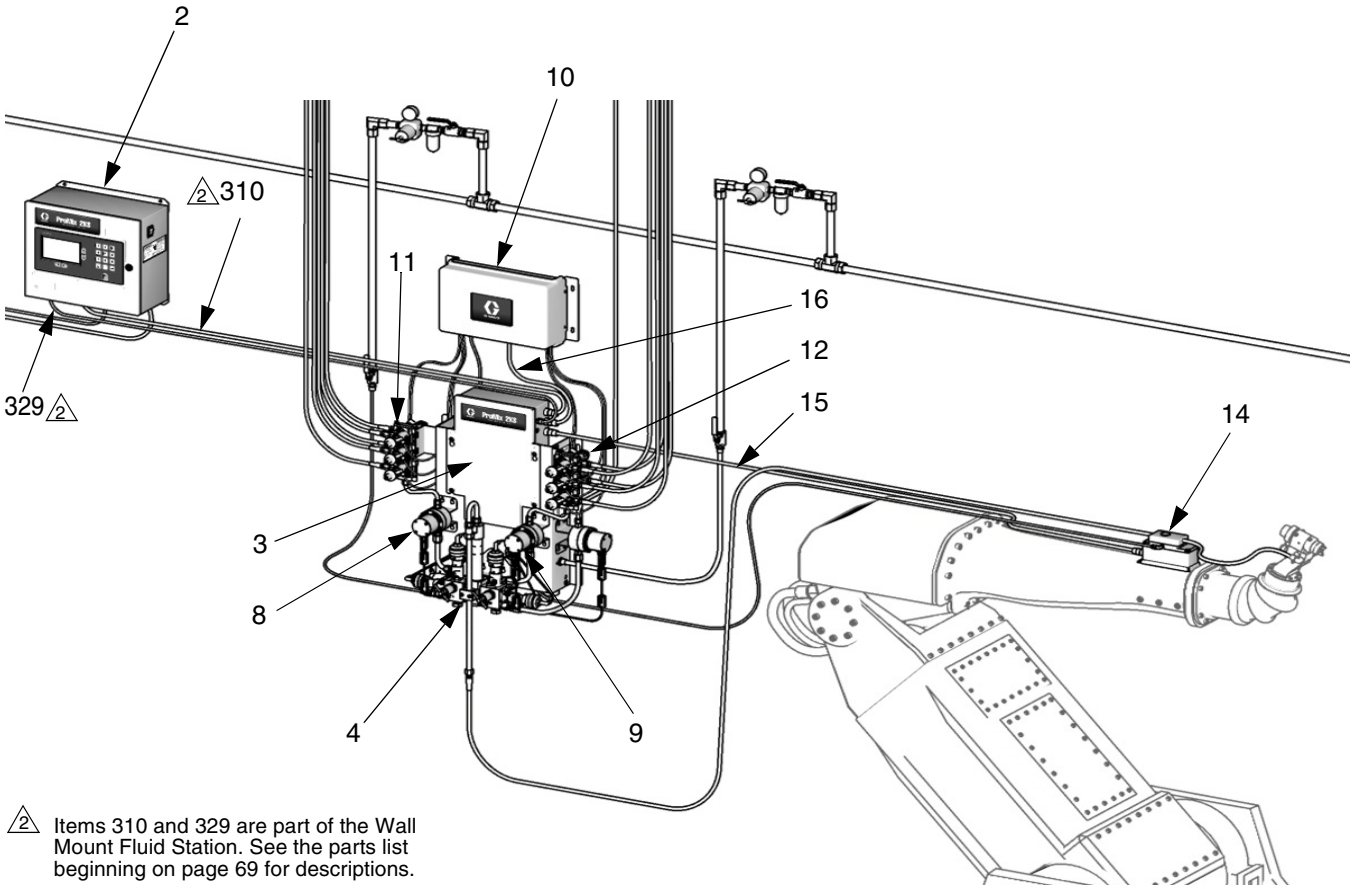
Configurator Key

The configured part number for your equipment is printed on the equipment identification labels. See the illustrations below for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system. *The digits in this table do not correspond to ref. nos. in the parts lists or parts drawings.*

Automatic System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Flow Control
A	D = EasyKey with LCD Display	0 = No Meters 1 = G3000 (A and B) 2 = G3000HR (A and B) 3 = 1/8 in. Coriolis (A) and G3000 (B) 4 = G3000 (A) and 1/8 in. Coriolis (B) 5 = 1/8 in. Coriolis (A) and G3000HR (B) 6 = G3000HR (A) and 1/8 in. Coriolis (B) 7 = 1/8 in. Coriolis (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure)	N = No Y = Yes



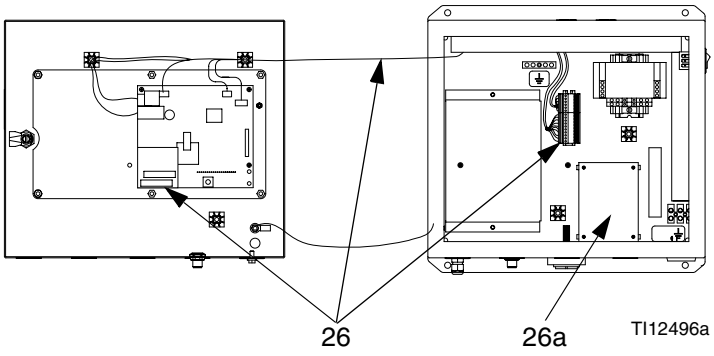
Part No. AD000N to AD742Y, includes EasyKey with LCD display



2 Items 310 and 329 are part of the Wall Mount Fluid Station. See the parts list beginning on page 69 for descriptions.

TI12553a

Detail of Automatic Upgrade Kit (26)



TI12496a

Part No. AD000N to AD742Y, includes EasyKey with LCD display

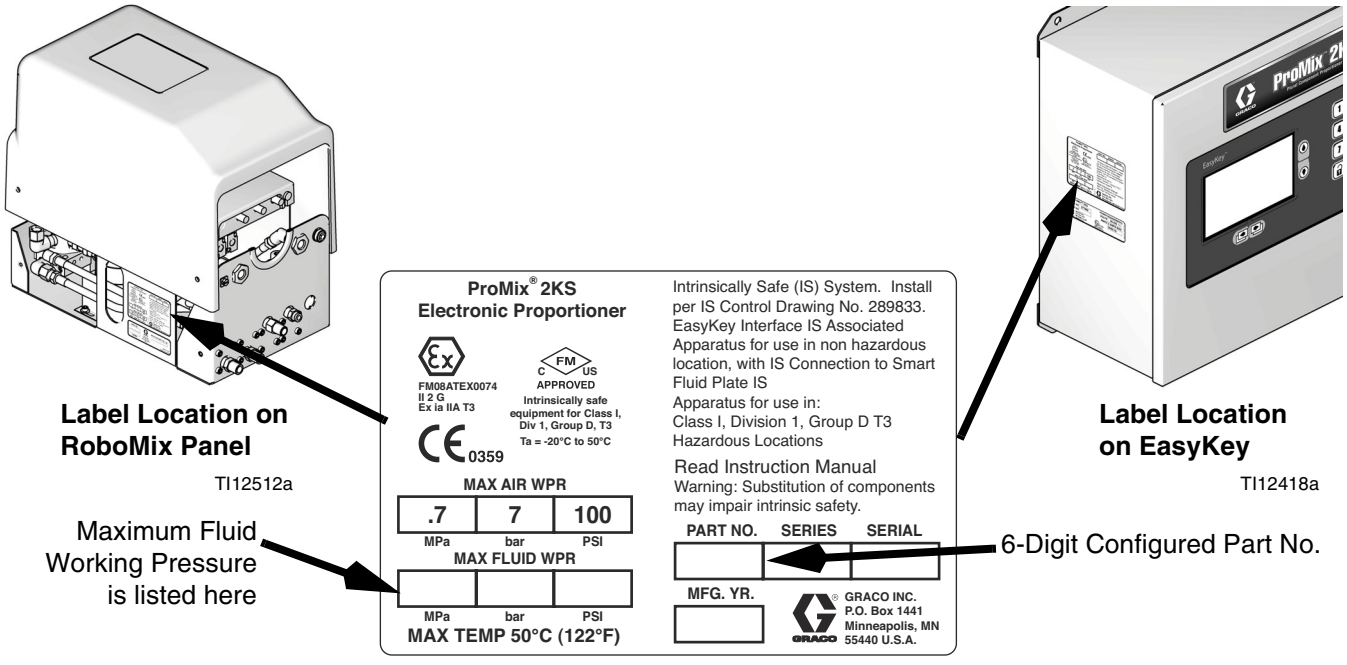
Ref. No.	Configured Digit (see page 59) or part usage	Part No.	Description	Qty
2	D	277869	CONTROL/DISPLAY, EasyKey; used on AD000N to AD742Y; see page 66	1
3	standard part	see page 68	PANEL, fluid	1
4	standard part	289695	MANIFOLD, mix; see manual 312781	1
8			KIT, flow meter A	
	0	none	none	0
	1	15V804	KIT, G3000 flow meter; see manual 308778	1
	2	15V827	KIT, G3000HR flow meter; see manual 308778	1
	3	15V806	KIT, Coriolis flow meter; see manual 313599	1
	4	15V804	KIT, G3000 flow meter; see manual 308778	1
	5	15V806	KIT, Coriolis flow meter; see manual 313599	1
	6	15V827	KIT, G3000HR flow meter; see manual 308778	1
	7	15V806	KIT, Coriolis flow meter; see manual 313599	1
9			KIT, flow meter B	
	0	none	none	0
	1	15V804	KIT, G3000 flow meter; see manual 308778	1
	2	15V827	KIT, G3000HR flow meter; see manual 308778	1
	3	15V804	KIT, G3000 flow meter; see manual 308778	1
	4	15V806	KIT, Coriolis flow meter; see manual 313599	1
	5	15V827	KIT, G3000HR flow meter; see manual 308778	1
	6	15V806	KIT, Coriolis flow meter; see manual 313599	1
	7	15V806	KIT, Coriolis flow meter; see manual 313599	1
10	0 - 4	see page 77	MODULE, control, color/catalyst change; see page 77	see page 77
11	0 - 4	see page 77	VALVE STACK, color change; see page 77	see page 77
12	0 - 2	see page 77	VALVE STACK, catalyst change; see page 77	see page 77
14			FLOW CONTROL	
	N	none	none	0
	Y	249849	REGULATOR, flow control	1
15	used with flow control only	15U977	CABLE, flow control; connects flow control regulator to fluid station; 40 ft (12.2 m)	0 or 1
16	used with color change only	15U532	CABLE, CAN, intrinsically safe; connects color change control module to fluid station; 3 ft (1 m)	0 or 1
26	standard part	15V256	KIT, automatic upgrade; includes item 26a	1
26a	standard part	15V825	• KIT, board, discrete I/O; part of item 26	1

ProMix 2KS Automatic RoboMix Panel System

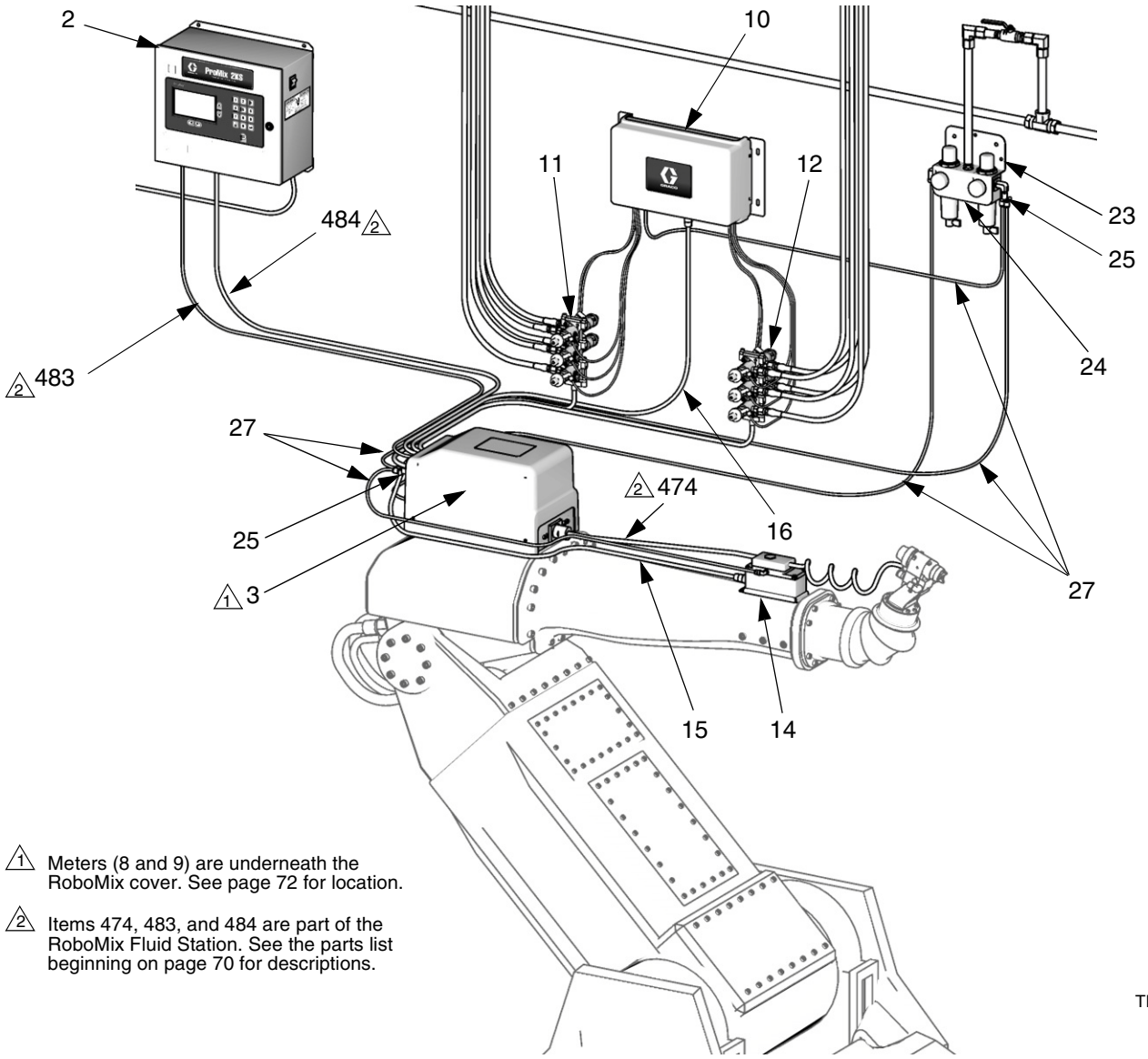
Configurator Key

The configured part number for your equipment is printed on the equipment identification labels. See the illustrations below for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system. *The digits in this table do not correspond to ref. nos. in the parts lists or parts drawings.*

Automatic System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Flow Control
R	D = EasyKey with LCD Display	0 = No Meters 1 = G250 (A and B) 2 = G250HR (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure)	N = No Y = Yes



Part No. RD000N to RD242Y, includes EasyKey with LCD display

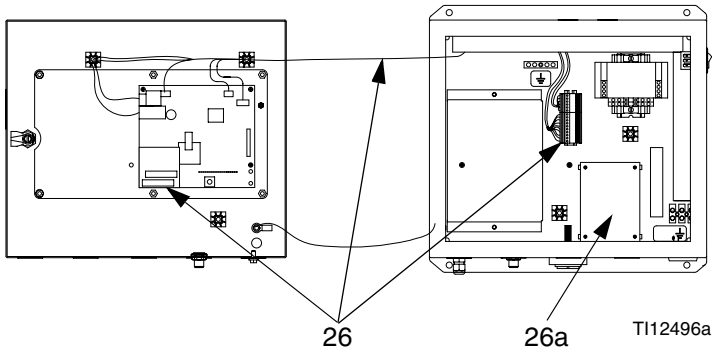


1 Meters (8 and 9) are underneath the RoboMix cover. See page 72 for location.

2 Items 474, 483, and 484 are part of the RoboMix Fluid Station. See the parts list beginning on page 70 for descriptions.

TI12552a

Detail of Automatic Upgrade Kit (26)



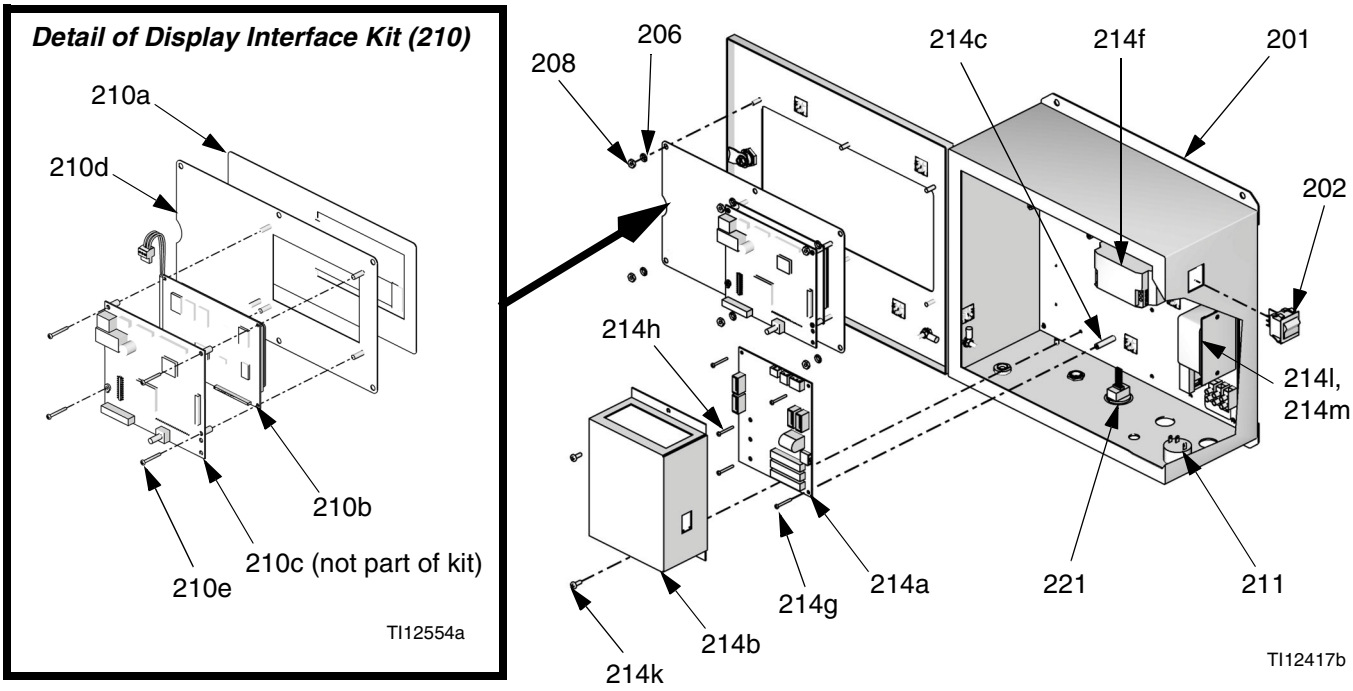
TI12496a

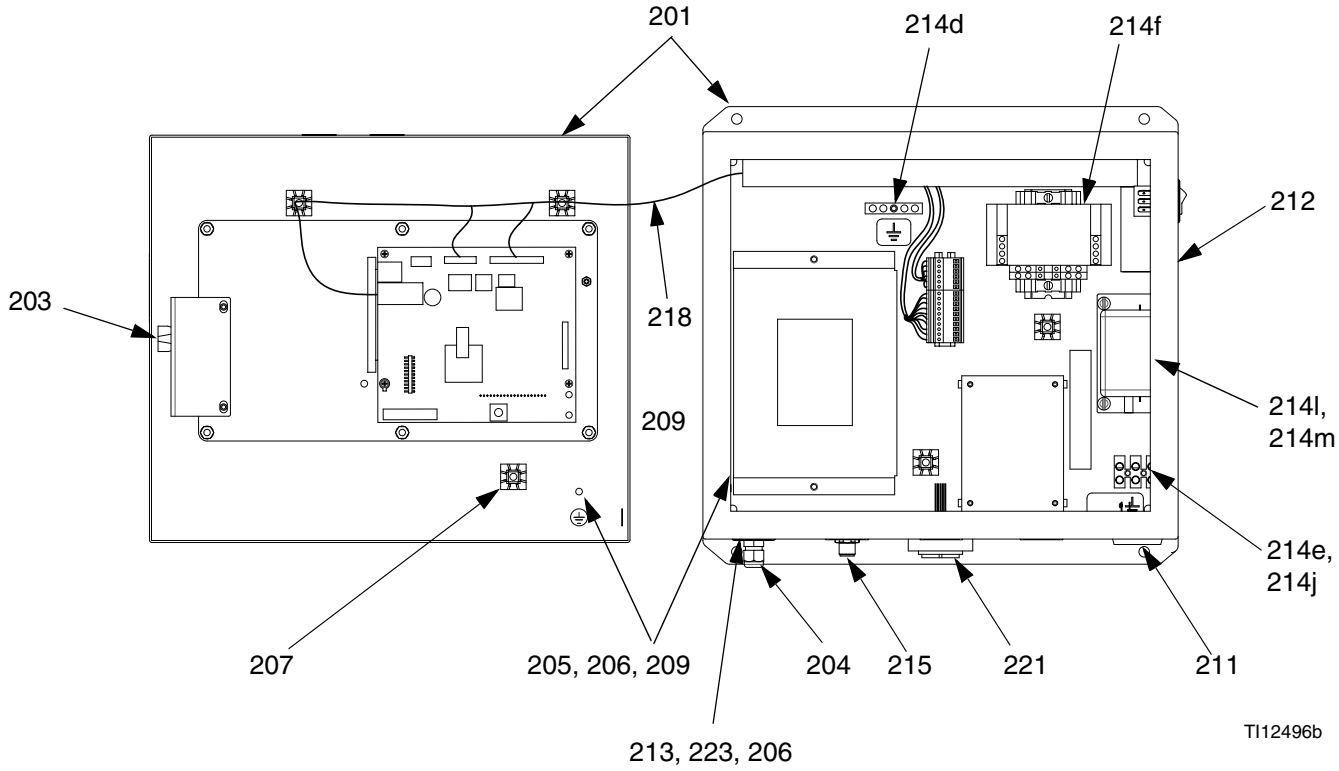
Part No. RD000N to RD242Y, includes EasyKey with LCD display

Ref. No.	Configured Digit (see page 59) or part usage	Part No.	Description	Qty
2	D	277869	CONTROL/DISPLAY, EasyKey; used on RD000N to RD242Y; see page 66	1
3	standard part	see page 70	PANEL, fluid, RoboMix	1
8			KIT, flow meter A	
	0	none	none	0
	1	249426	KIT, G250 flow meter; see page 72 for location and manual 308778 for parts	1
	2	249427	KIT, G250HR flow meter; see page 72 for location and manual 308778 for parts	1
9			KIT, flow meter B	
	0	none	none	0
	1	249426	KIT, G250 flow meter; see page 72 for location and manual 308778 for parts	1
	2	249427	KIT, G250HR flow meter; see page 72 for location and manual 308778 for parts	1
10	0 - 4	see page 77	MODULE, control, color/catalyst change; see page 77	see page 77
11	0 - 4	see page 77	VALVE STACK, color change; see page 77	see page 77
12	0 - 2	see page 77	VALVE STACK, catalyst change; see page 77	see page 77
14			FLOW CONTROL	
	N	none	none	0
	Y	249849	REGULATOR, flow control	1
15	used with flow control only	15G611	CABLE, flow control; connects flow control regulator to fluid station; 10 ft (3.05 m)	0 or 1
16	used with color change only	15U533	CABLE, CAN, intrinsically safe; connects color change control module to fluid station; 50 ft (15.25 m)	0 or 1
23	standard part	570122	CONTROL, air filter/regulator	1
24	standard part	15G768	PLUG, push fitting; 1/2 in.	1
25	standard part		ADAPTER, Y fitting; 1/4 (6 mm) OD tube	
		114158	systems without flow control	1
		114158	systems with flow control	2
26	standard part	15V256	KIT, automatic upgrade; includes item 26a	1
26a	standard part	15V825	• KIT, board, discrete I/O; part of item 26	1
27	standard part	n/a	TUBE; polyethylene; 1/4 in. (6 mm) OD; 150 ft (45.7 m); for purge air supply, RoboMix logic air supply, and flow control air regulator supply	A/R

EasyKey Controls

277869 EasyKey, with Display





277869 EasyKey, with Display

Ref. No.	Part No.	Description	Qty
201	n/a	CONTROL BOX, with display	1
202	116320	SWITCH, power	1
203	n/a	LATCH; includes item 3a	1
203a	117818	• KEY	1
204	111987	CONNECTOR, cord strain relief	1
205	110911	NUT, hex; M5 x 0.8	4
206	111307	WASHER, lock, external tooth; M5	9
207	n/a	HOLDER, tie	8
208	C19293	NUT, hex	6
209	194337	WIRE, grounding, door	1
210	15X779	KIT, display, interface; includes items 210a, 210b, 210d, and 210e; does not include 210c	1
210a	n/a	• MEMBRANE	1
210b	n/a	• GRAPHIC, display	1
210c	255767	• BOARD, EasyKey display (not part of kit)	1
210d	n/a	• PLATE	1
210e	n/a	• SCREW; 4-40 x 1 in. (25 mm)	4
211	15D568	ALARM	1
212▲	15W776	LABEL, warning	1
213	223547	GROUND WIRE; 25 ft (7.6 m)	1
214	n/a	PLATE, application; includes items 214a-214m	1
214a	255786	• BOARD, barrier, IS; (includes fuses 15D979 and 114788, see page 43 for fuse location)	1
214b	n/a	• COVER	1
214c	117526	• SPACER	3
214d	119257	• BAR, ground	1
214e	114095	• BLOCK, terminal	1
214f	121314	• POWER SUPPLY; 24 Vdc; 2A	1
214g	n/a	• SCREW, machine, pan-hd; 6-32 x 3/8 in. (10 mm)	3
214h	n/a	• SCREW, machine, pan-hd; 6-32 x 1-1/2 in. (38 mm)	2
214j	n/a	• SCREW, machine, pan-hd; 8-32 x 3/4 in. (19 mm)	2
214k	n/a	• SCREW, machine, pan-hd; 10-24 x 3/8 in. (10 mm)	11
214l	123823	• FILTER, line, single-phase; 110/250 V; 3 A	1
214m	123824	• BRACKET, line filter	1
215	15V280	HARNESS, connection	1
216	15G569	LABEL, EasyKey inputs	1
218	15R642	HARNESS, wire	1
220	n/a	SOFTWARE, application	1
221	198165	CONNECTOR, RJ45, with bulkhead fitting	1
223	116343	SCREW, ground; M5 x 0.8	1
224	15G869	CABLE, ethernet, CAT5; 6 ft (1.8 m); to make web interface connection to a computer	1

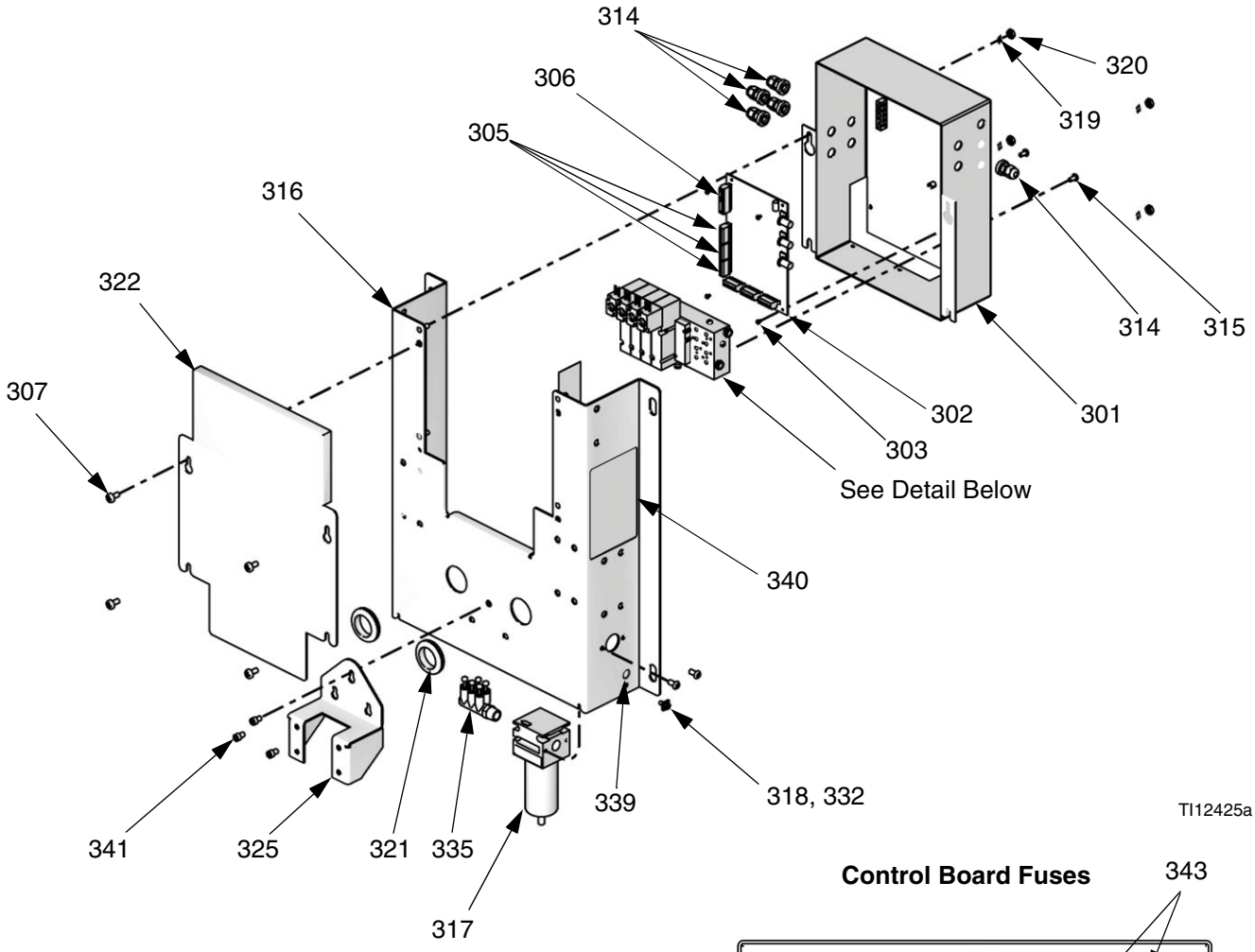
▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Parts labeled n/a are not available separately.

Available Cables

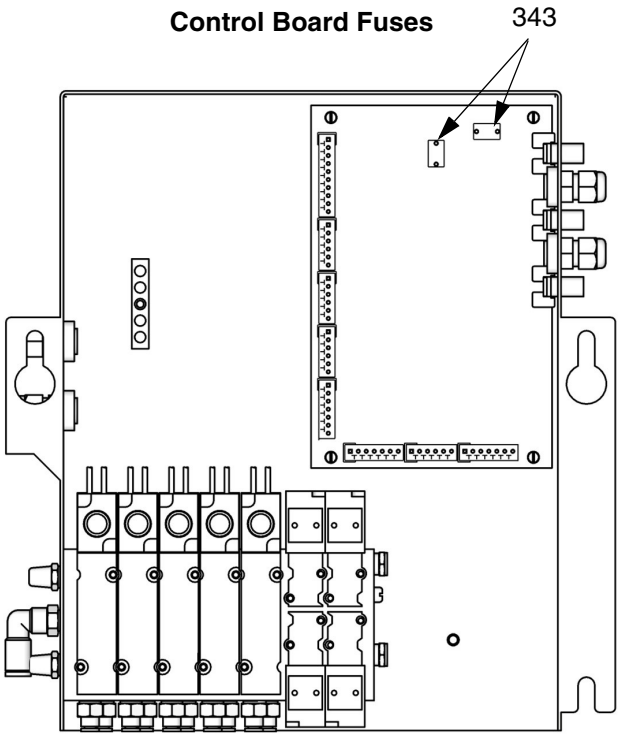
CAN Cables		
Part No.	**Length ft (m)**	**Usage**
15U531	2 (0.61)	Option
15U532	3 (0.92)	Standard color change
15V205	6 (1.83)	Option
15V206	10 (3.05)	Option
15V207	15 (4.57)	Option
15V208	25 (7.62)	Option
15U533	50 (15.25)	Standard power
15V213	100 (30.50)	Option
Fiber Optic Cables		
Part No.	**Length**	**Usage**
15D320	50 (15.25)	Standard
15G710	100 (30.50)	Option

Wall Mount Fluid Station



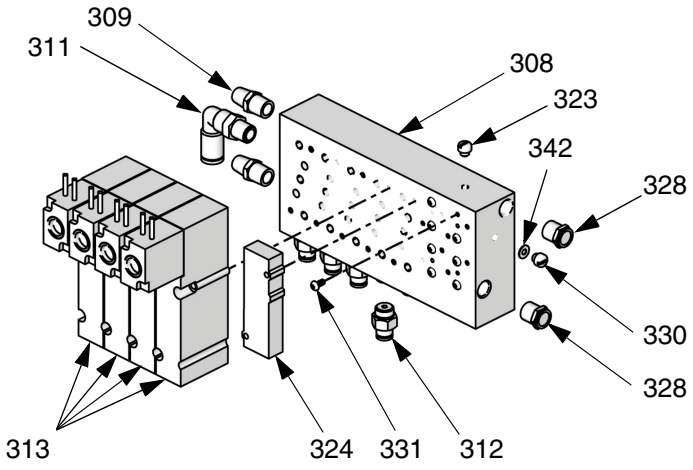
TI12425a

Control Board Fuses



TI12652b

Solenoid Manifold Detail



TI12426a

Wall Mount Fluid Station

NOTE: Parts are shown on page 68, unless noted.

Ref. No.	Part No.	Description	Qty
301	256529	ENCLOSURE	1
302	255765	BOARD, circuit	1
303	n/a	SCREW, machine, pan hd; 4-40 x 3/16 in. (5 mm)	4
304	119257	CONNECTOR, bar, ground	1
305	119162	CONNECTOR, plug, 6-position	6
306	116773	CONNECTOR, plug,10-position	1
307	113783	SCREW, machine, pan hd; 1/4-20 x 1/2 in. (13 mm)	4
308	15R668	MANIFOLD, solenoid, 5 station	1
309	C06061	MUFFLER	2
310	15U533	CABLE, CAN, intrinsically safe; 50 ft (15.25 m); see page 60 for location	1
311	112781	ELBOW, swivel, 90°; 1/8 npt(m) x 1/4 in. (6 mm) OD tube	1
312	114263	FITTING, tube; 1/8 npt(m) x 5/32 in. (4 mm) OD tube	8
313	121374	VALVE, solenoid, 4-way, intrinsically safe; 12 Vdc	4
314	111987	CONNECTOR, cord strain relief	5
315	114669	SCREW, machine, phillips pan hd; M5 x 0.8; 10 mm	2
316	n/a	PLATE, mounting	1
317	114124	FILTER, air; 3/8 npt; includes 317a	1
317a	114228	• ELEMENT, filter; 5 micron	1
318	116343	SCREW, ground	1
319	100985	WASHER, lock, external tooth; 1/4	4
320	101345	NUT, hex, jam; 1/4-20	4
321	120685	GROMMET	2
322	15U507	COVER, enclosure	1
323	100139	PLUG, pipe; 1/8 npt	2
324	552183	PLATE, blanking	1
325	15U510	BRACKET, mounting, mix manifold	1
327	n/a	COVER, fluid station	1
328	121072	MUFFLER	2
329	15D320	CABLE, fiber-optic, twin; 50 ft (15.25 m); see page 60 for location	1
330	104644	PLUG, screw; 10-32 x 5/32 in. (4 mm)	2
331	121628	SCREW, machine, self-sealing; 4-40 x 1/4 in. (6 mm)	8
332	223547	WIRE, ground; 25 ft (7.6 m)	1
334	n/a	TUBE, nylon; to connect air manifold (335) to elbow (311) at solenoid manifold (308); 1/4 in. (6 mm) OD; 2.5 ft (0.76 m)	A/R
335	15U679	MANIFOLD, air; 3/8 npt(m) x six 1/4 in. (6 mm) OD tube ports	1
336	n/a	TUBE, nylon, green; for control air to turn valves on; 5/32 in. (4 mm) OD; four 2 ft (0.6 m) lengths	A/R
337	n/a	TUBE, nylon, red; for control air to turn valves off; 5/32 in. (4 mm) OD; four 2 ft (0.6 m) lengths	A/R
338	16J457	TUBE, nylon; for purge air supply; 1/4 in. (6 mm) OD; 25 ft (7.6 m); includes caution label 626413	1
339▲	186620	LABEL, symbol, ground	1
340▲	15W775	LABEL, warning	1
341	C19798	SCREW, cap, socket-hd; 1/4-20 x 3/8 in. (10 mm)	3
342	104640	GASKET	3
343◆	123690	FUSE; 125 mA	2

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

◆ *Replacing the fuse with a non-Graco fuse voids the IS system safety approval.*

Parts labeled n/a are not available separately.

RoboMix Fluid Station

NOTE: Parts are shown on pages 72 and 73, unless noted.

RoboMix Panel, no dump valve

RoboMix Panel, one dump valve

RoboMix Panel, two dump valves*

Ref. No.	Part No.	Description	Qty
401	15U712	PANEL, RoboMix	1
402	C19979	SCREW, cap, socket-hd; 10-24 x 3/8 in. (10 mm)	
		Panel with no dump valve	8
		Panel with one dump valve	12
		Panel with two dump valves	16
403	C19798	SCREW, cap, socket-hd; 1/4-20 x 3/8 in. (10 mm)	4
404	114339	UNION, swivel; 1/4 npt(m) x 1/4 npsm(f); sst	
		Panel with no dump valve	5
		Panel with one dump valve	6
		Panel with two dump valves	7
406	111307	WASHER, lock, external tooth; M5	1
407	110911	NUT, hex; M5 x 0.8	1
408	15U713	VALVE, adapter, RoboMix	
		Panel with no dump valve	1
		Panel with one dump valve	2
		Panel with two dump valves	3
409	15U714	VALVE, adapter, RoboMix	1
410	15U716	COVER, panel, RoboMix	1
411	15U853	FITTING, bulkhead, 1/4 npt x M20	2
412	104371	SCREW, cap, socket-hd; 10-32 x 3/8 in. (10 mm)	6
413	15U717	HOSE, component B supply; 1/4 npt(mbe); ptfe; 7.5 in. (191 mm)	1
414	15U718	HOSE, component A supply; 1/4 npt(mbe); ptfe; 8 in. (203 mm)	1
415	15U719	HOSE, solvent; 1/4 npt(mbe); ptfe; 12 in. (305 mm)	1
416	15U720	HOSE, component A dump; 1/4 npt(mbe); ptfe; 15.5 in. (394 mm)	
		Panel with no dump valve	0
		Panel with one dump valve	1
		Panel with two dump valves	1
417	15U721	HOSE, component B dump; 1/4 npt(mbe); ptfe; 10.5 in. (267 mm)	
		Panel with no dump valve	0
		Panel with one dump valve	0
		Panel with two dump valves	1
419	104116	WASHER, plain; no. 10	6
420	700332	SCREW, thumb; 8-32	6
421	15X304	VALVE, dispense; includes item 422; see 312782	
		Panel with air and solvent purge valves, no dump valve	2
		Panel with air and solvent purge valves, one dump valve	3
		Panel with air and solvent purge valves, two dump valves	4
422	n/a	O-RING; ptfe	
		Panel with no dump valve	2
		Panel with one dump valve	3
		Panel with two dump valves	4
423	166421	NIPPLE; 1/4 npt	
		Panel with no dump valve	0
		Panel with one dump valve	1
		Panel with two dump valves	2
424	101970	PLUG, pipe; 1/4 npt; sst	1
425	15U723	SUPPORT, board, RoboMix	1
426	255765	BOARD, circuit	1
427	15U724	COVER, board, RoboMix	1

Ref. No.	Part No.	Description	Qty
428	107295	SCREW, machine, pan-hd; 4-40 x 3/16 in. (5 mm)	4
429	15U725	MANIFOLD, solenoid, Robo-Mix	1
431	109193	ELBOW, tube; 10-32 x 5/32 in. (4 mm) OD tube	4
432	108382	FITTING, seal, o-ring; 10-32	8
433	120053	ELBOW, tube; 10-32 x 1/4 in. (6 mm) OD tube	1
434	111328	CONNECTOR, male; 10-32 x 5/32 in. (4 mm) OD tube	5
435	113933	ELBOW, 45°; 1/4 npt (m x f)	2
436	111987	CONNECTOR, cord strain relief	3
437	120030	PLATE, blank, solenoid	
		Panel with no dump valve	3
		Panel with one dump valve	2
		Panel with two dump valves	1
438	15U726	METER, mount, RoboMix	1
439	15U727	SPACER, meter, RoboMix	1
440	117018	WASHER	4
441	116899	SCREW, cap, socket-hd; M6 x 1; 10 mm; sst	2
442	117028	SCREW, cap, socket-hd; M6 x 1.0; 16 mm	2
443	114446	ELBOW, swivel, 90°; 1/4 npt(m) x 1/4 npsm(f); sst	
		Panel with no dump valve	0
		Panel with one dump valve	1
		Panel with two dump valves	2
458	501867	VALVE, check; 1/4 npt (mbe)	1
463	119257	CONNECTOR, bar, ground	1
464	801012	GROMMET	2
465	15U730	SPACER, valve mount, Robo-Mix	1
466	15U928	CABLE, 90°, for G250 and G250HR meters; see page 34 for connection points	2
474	949122	KIT, flexible mixer; see page 64	1
477	256654	MANIFOLD, RoboMix; see page 74	1
478	C19810	SCREW, cap, socket-hd; 1/4-20 x 1 in. (25 mm)	2
479	15X764	SEAT, valve	
		Panel with no dump valve	2
		Panel with one dump valve	3
		Panel with two dump valves	4
480	116343	SCREW, ground; M5 x 0.8	1
483	15D320	CABLE, fiber-optic, twin; 50 ft (15.25 m); see page 64 for location	1
484	15U533	CABLE, CAN, intrinsically safe; 50 ft (15.25 m); see page 64 for location	1
485▲	15G809	LABEL, safety	1
486	121795	VALVE, solenoid, 4-way	
		Panel with no dump valve	4
		Panel with one dump valve	5
		Panel with two dump valves	6
488	104176	BULKHEAD, tube; 1/4 in. (6 mm) OD both ends	1
489	223547	WIRE, ground, 25 ft (7.6 m)	1
490	116658	FITTING, tube; 1/4 npt(m) x 1/4 in. (6 mm) OD tube	2
492	n/a	TUBE, air; polyethylene; 1/4 in. (6 mm) OD; 1-1/2 ft (0.46 m)	1
493	15V267	KIT, ratio check, RoboMix	1
494	15G795	CONNECTOR, plug, 6 position	4
495	15V409	CONNECTOR, plug, 10 position	1
496	15V888	RETAINER, seat, valve	
		Panel with no dump valve	2
		Panel with one dump valve	3
		Panel with two dump valves	4
497◆	123690	FUSE; 125 mA	1

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

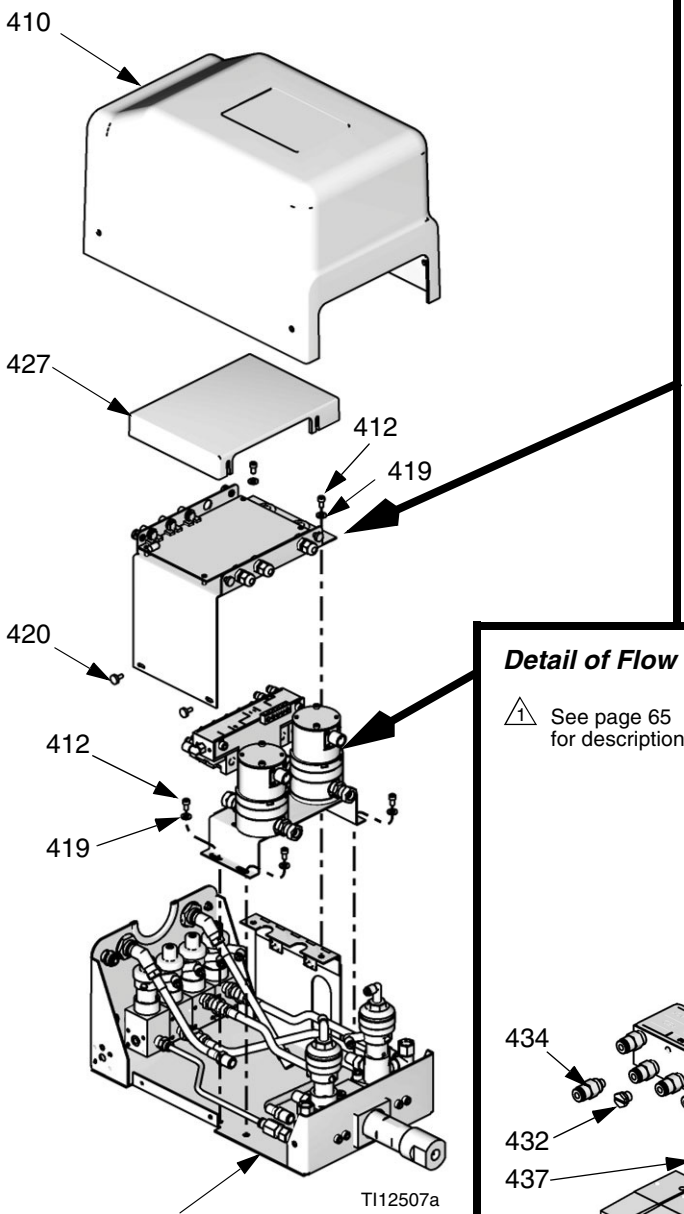
◆ *Replacing the fuse with a non-Graco fuse voids the IS system safety approval.*

***** *Available as kit, Part. No. 24V862.*

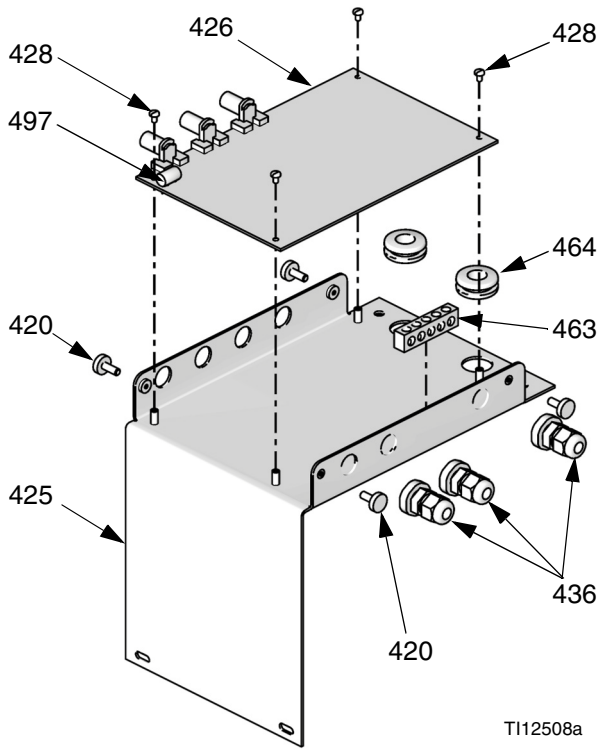
Parts labeled n/a are not available separately.

RoboMix Fluid Station

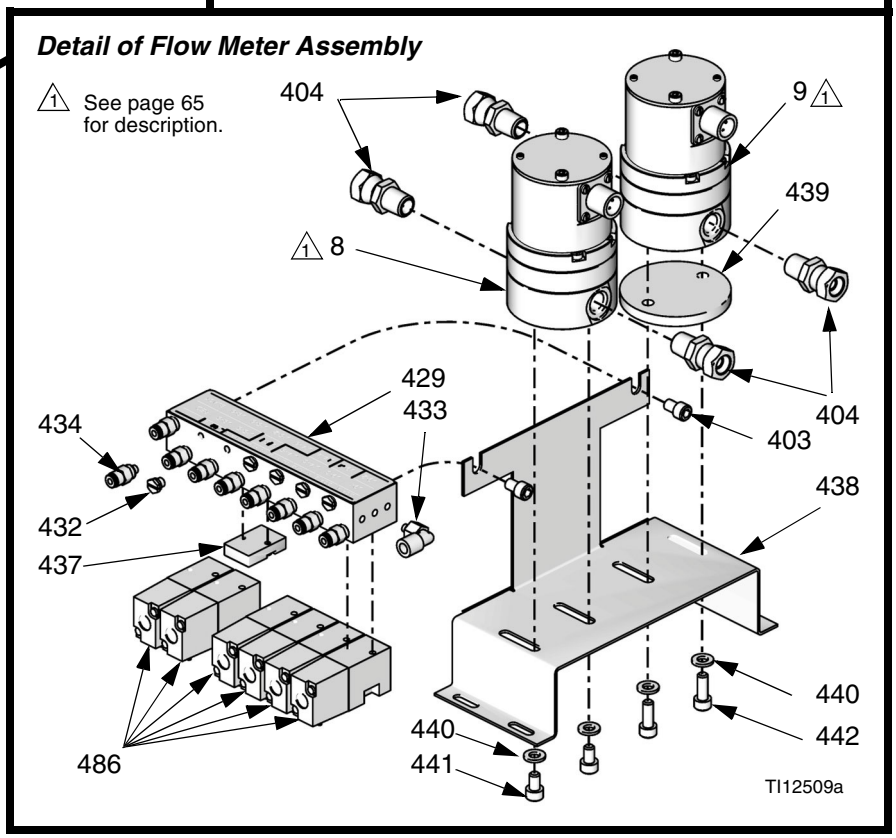
RoboMix Panel, two dump valves shown



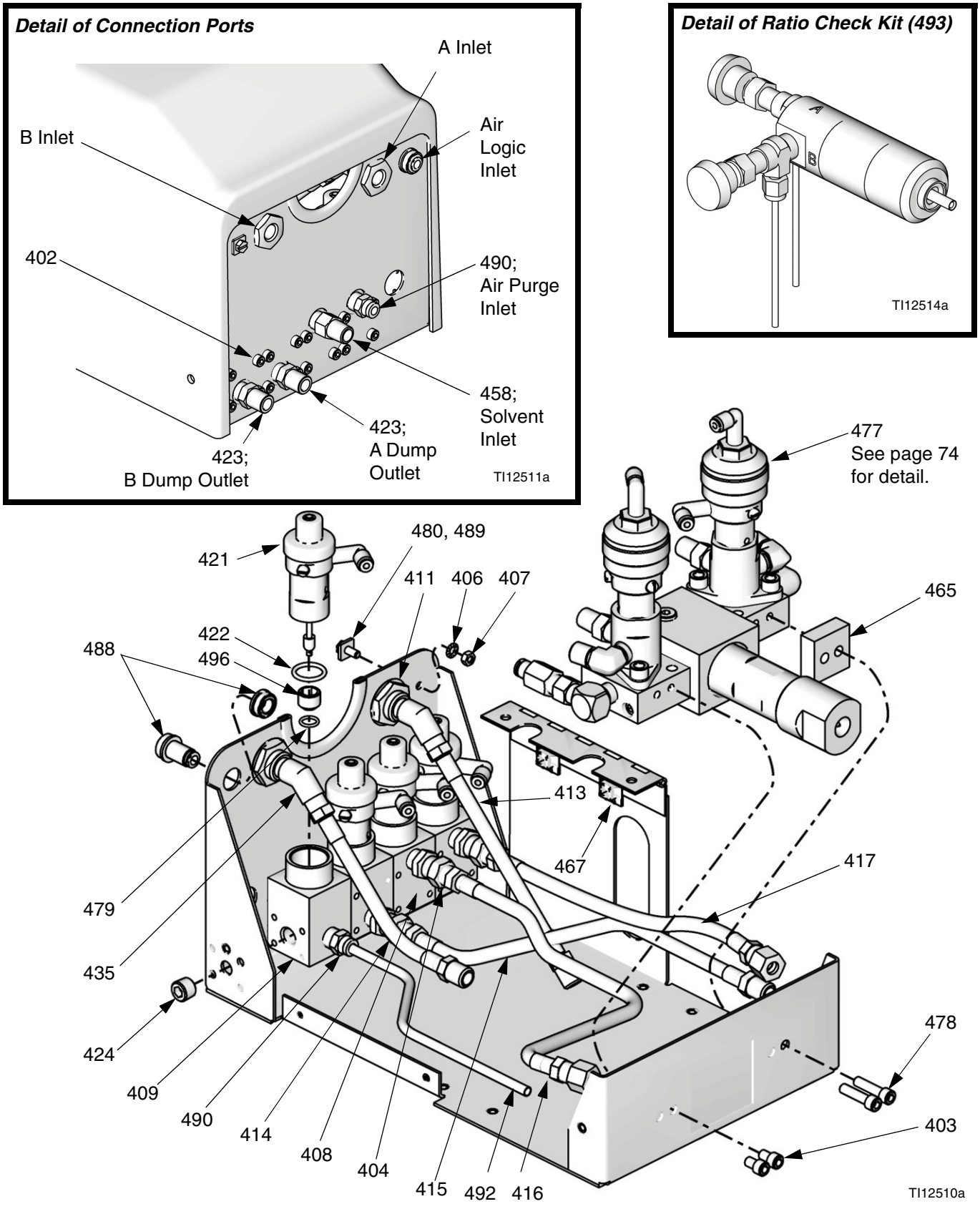
Detail of Circuit Board Assembly



Detail of Flow Meter Assembly



RoboMix Fluid Station



256654 RoboMix Manifold

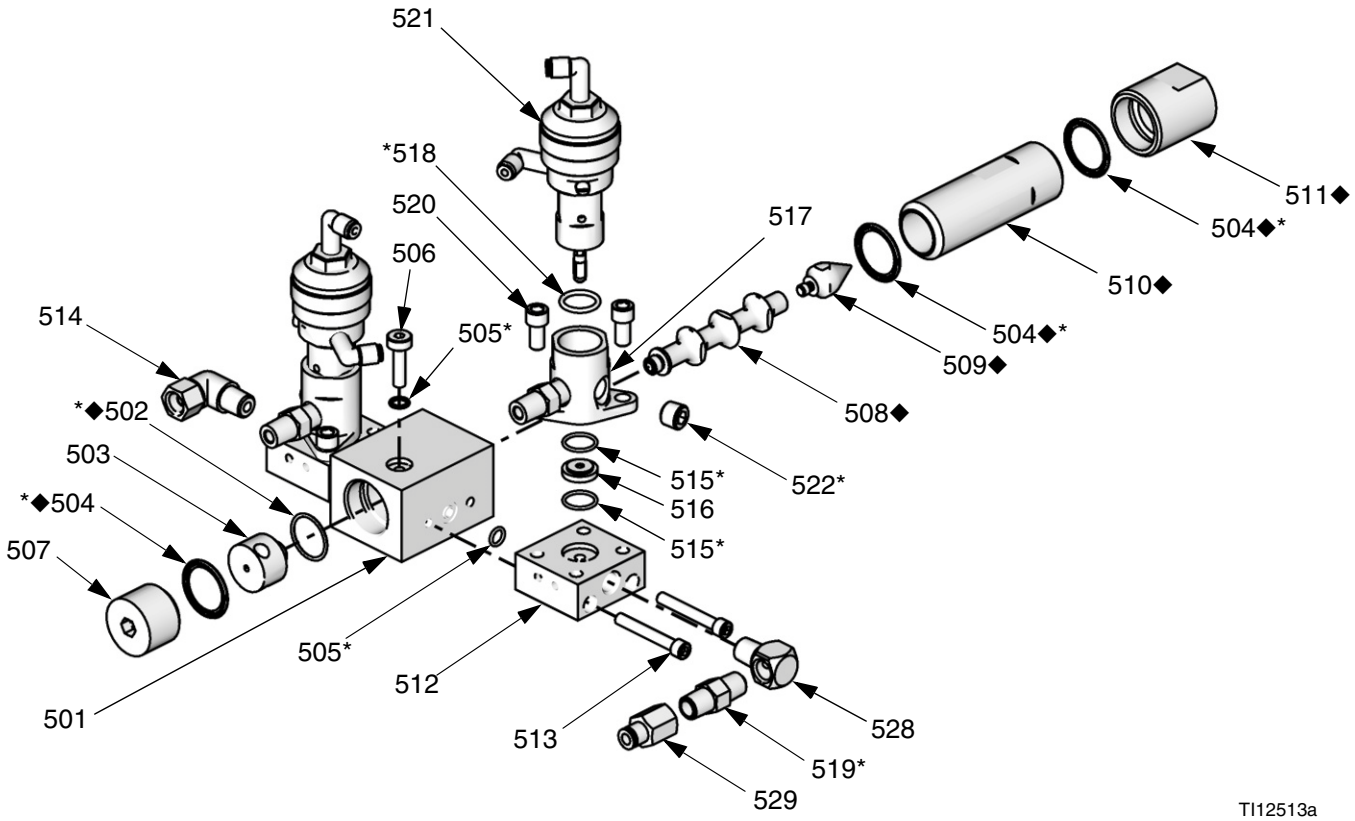
Ref. No.	Part No.	Description	Qty
501	15U728	HOUSING, integrator, RoboMix	1
502◆*	n/a	O-RING; ptfe	1
503	15T943	BASE, integrator	1
504◆*	n/a	O-RING; ptfe	3
505*	n/a	O-RING; ptfe	3
506	15T748	SEAL, screw; 1/4-28	1
507	15T592	PLUG, integrator manifold	1
508◆	n/a	MIXER, integrator, 25cc	1
509◆	n/a	CAP, mix	1
510◆	n/a	HOUSING, 25 cc	1
511◆	n/a	CAP, housing	1
512	15U729	VALVE, mount, RoboMix	2
513	101885	SCREW, cap, socket-hd; 1/4-20 x 1-3/4 (44 mm)	4
514	114446	UNION, 90°; 1/4 npt(m) x 1/4 npsm(f)	1
515*	n/a	O-RING; ptfe	4
516	15U686	SEAT, valve needle, high pressure	2
517	15T600	ADAPTER, valve	2
518*	n/a	O-RING; ptfe	2
519*	501867	VALVE, check	3
520	15T875	SCREW, cap, socket-hd; 5/16-24 x 5/8 in. (16 mm)	4
521	15X303	VALVE, dispense; includes item 518; see 312782	2
522*	101970	PLUG, pipe	2
528	166866	ELBOW, street; 1/4 npt (m x f)	1
529	114112	FITTING; 1/4 npt(f) x 1/4 in. (6 mm) OD tube	1

* *Parts included in Manifold Service Kit 15V480. Purchase separately.*

◆ *Parts included in 25cc Integrator Service Kit 15V033. Purchase separately.*

Parts labeled n/a are not available separately.

256654 RoboMix Manifold



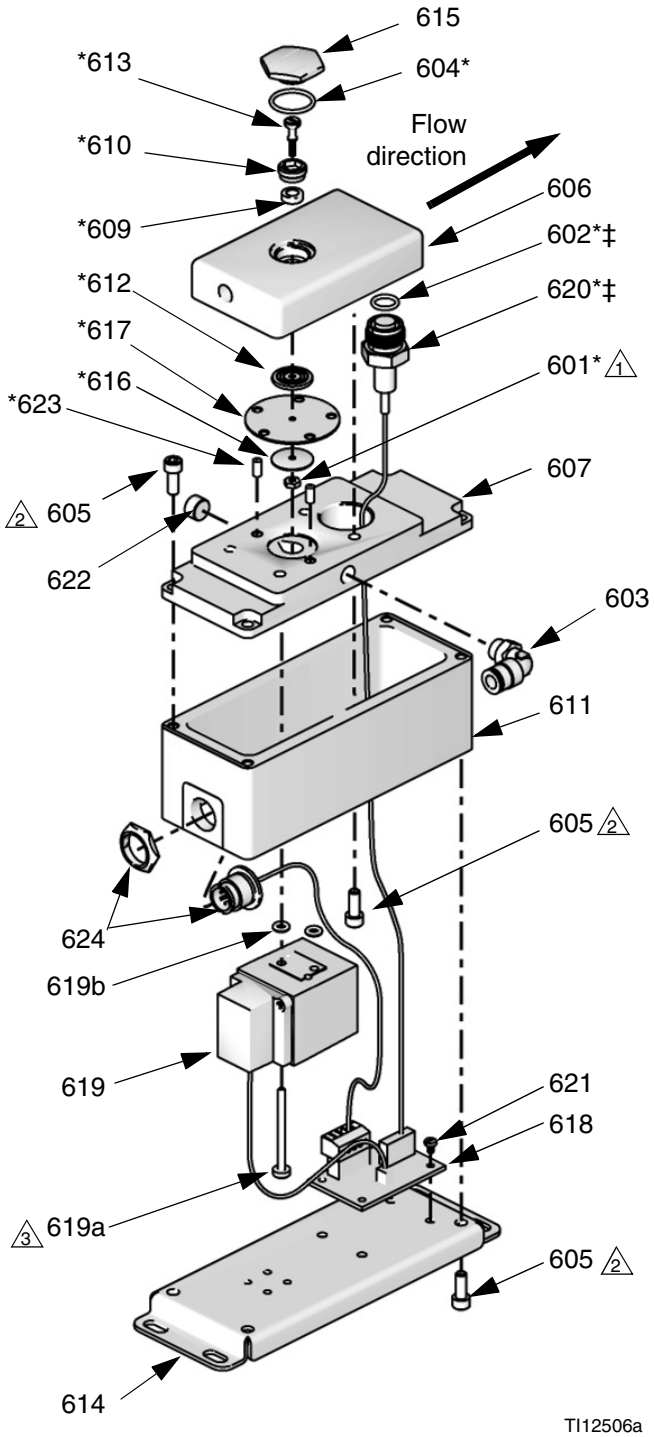
249849 Flow Control Regulator

Ref. No.	Part No.	Description	Qty
601*	102980	NUT, full, hex; 4-40	1
602‡*	n/a	O-RING; chemically resistant fluoroelastomer	1
603	112698	ELBOW; 1/8 npt(m) x 1/4 in. (6 mm) OD tube	1
604*	n/a	O-RING; chemically resistant fluoroelastomer	1
605	n/a	SCREW, cap, socket-hd; 10-32 x 1/2 in. (13 mm)	12
606	n/a	PLATE, fluid, regulator	1
607	15F799	PLATE, air, regulator	1
609*	n/a	SEAT, regulator	1
610*	n/a	RETAINER, seat	1
611	n/a	HOUSING, flow control	1
612*	n/a	SPACER, regulator	1
613*	n/a	NEEDLE, regulator	1
614	n/a	BRACKET, flow control	1
615	15F806	PLUG, regulator	1
616*	168881	GASKET; acetal	1
617*	178321	DIAPHRAGM, regulator	1
618	249179	BOARD, circuit assembly	1
619	120013	VALVE, proportional, V/P; includes items 619a and 619b	1
619a	n/a	• SCREW, cap, socket-hd; M3 x 0.5 x 44 mm	2
619b	106560	• O-RING, mounting, 007	2
620‡*	n/a	SENSOR, pressure control	1
621	107295	SCREW, machine, pan-hd; 4-40 x 3/16 in. (5 mm)	4
622	104765	PLUG, pipe; 1/8 ptf	1
623*	192387	PIN, dowel	2
624	15G613	WIRE HARNESS, flow control	1

* *Parts included in Regulator Service Kit 15G843. Purchase separately.*

‡ *Parts included in Sensor Service Kit 15G867. Purchase separately.*

Parts labeled n/a are not available separately.



1 Torque to 8-10 in-lbs (0.9-1.1 N•m)

2 Torque to 30-40 in-lbs (3.4-4.5 N•m)

3 Torque to 5-7 in-lbs (0.6 -0.8 N•m)

Color Change Accessory Kits

Low Pressure Color Change Kits

Kit Part No.	Kit Description	Control Module (10; see 312787)	Color Change Valve Stack (11; see 312783)	Catalyst Change Valve Stack (12; see 312783)
256581	2 color	277752	15V812	none
256582	4 color	277753	15V813	none
256583	7 color	277754	15V814	none
256584	12 color	277755	15V815	none
256585	2 color/2 catalyst	277756	15V812	15V812
256586	4 color/2 catalyst	277757	15V813	15V812
256587	4 color/4 catalyst	277771	15V813	15V813
256588	7 color/2 catalyst	277758	15V814	15V812
256589	7 color/4 catalyst	277772	15V814	15V813
256590	12 color/2 catalyst	277759	15V815	15V812
256591	12 color/4 catalyst	277773	15V815	15V813
256592	13-18 color	278113	256293	none
256593	13-24 color	278114	15V815	none
256594	13-30 color	277773	256305	none
256595	1 catalyst/1 flush	278095	none	256994

Technical Data

Maximum fluid working pressure	*Base system:* 4000 psi (27.58 MPa, 275.8 bar) *Low pressure color change:* 300 psi (2.07 MPa, 20.6 bar) *Coriolis meter:* 2300 psi (15.86 MPa, 158.6 bar) *RoboMix system:* 190 psi (1.31 MPa, 13.1 bar) *Flow control:* 190 psi (1.31 MPa, 13.1 bar)
Maximum working air pressure	100 psi (0.7 MPa, 7 bar)
Air supply	75 - 100 psi (0.5 - 0.7 MPa, 5.2 - 7 bar)
Air filter inlet size	3/8 npt(f)
Air filtration for air logic and purge air (Graco-supplied)	5 micron (minimum) filtration required; clean and dry air
Air filtration for atomizing air (user-supplied)	30 micron (minimum) filtration required; clean and dry air
Mixing ratio range	0.1:1- 50:1*
On-ratio accuracy	up to $\pm$ 1%, user selectable
Fluids handled	one or two component: • solvent and waterborne paints • polyurethanes • epoxies • acid catalyzed varnishes • moisture sensitive isocyanates
Viscosity range of fluid	20- 5000 cps*
Fluid filtration (user-supplied)	100 mesh minimum
Fluid flow rate range*	
G3000, G250 Meter	75 - 3800 cc/min. (0.02-1.00 gal./min.)
G3000HR, G250HR Meter	38 - 1900 cc/min. (0.01-0.50 gal./min.)
Coriolis Meter	20 - 3800 cc/min. (0.005-1.00 gal./min.)
S3000 Solvent Meter (accessory)	38 - 1900 cc/min. (0.01-0.50 gal./min.)
Fluid inlet sizes	
Flow Meter	1/4 npt(f)
Dose Valve/Color Valve Adapters	1/4 npt(f)
Fluid outlet size (static mixer)	1/4 npt(f)
External Power Supply Requirements	85 - 250 Vac, 50/60 Hz, 2 amps maximum draw 15 amp maximum circuit breaker required 8 to 14 AWG power supply wire gauge
Operating temperature range	41- 122° F (5-50° C)
Environmental Conditions Rating	indoor use, pollution degree (2), installation category II
Noise Level	
Sound pressure level	below 70 dBA
Sound power level	below 85 dBA
Wetted parts	303, 304 SST, Tungsten carbide (with nickel binder), perfluoroelastomer; PTFE

* Dependent on programmed K-factor and application. The maximum allowable flow meter pulse frequency is 425 Hz (pulses/sec). For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

See individual component manuals for additional technical data.

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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Original instructions. This manual contains English. MM 312780

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